

PERSONAL

I would love to know whether, since the cuts, the standard of instrumental music among school-children has begun perceptibly to drop. It may be too soon to discover. Even the most hard-pressed I.e.s. would presumably be unwilling to stop the lessons of a talented musician in mid-course, or to deem that her parents might not contribute to the costs. Certainly the National Youth Orchestra, to start at an exulted level, shows no audible sign of depression. It still provides not only an amazingly good sound, but on education for its members in learning music, and reading it and interpreting it quickly and intelligently, skills which have always been the hallmark of British professional orchestras. Moreover there seems to be no falling-off yet in the many county orchestras, and inter-school orchestras up and down the country.

But the whole issue of payment for instrumental lessons is boiling up again. A few parents are, all over again, denouncing that I.e.s. who have compromised by asking for voluntary contributions to instrumental fees should pay for lessons in full, and are prepared to argue, in court if necessary, that anything else is a breach of the law.

I suppose there is something admirable in the pursuit by these parents of a principle. The trouble is that there could not possibly be supposed to exist a natural right to instrumental lessons. The right, if it exists under present law, is nothing but the right to have such lessons free, if they are provided at all. The obvious, and indeed inevitable, solution for the I.e.s. is to cease to provide the lessons; and, seriously, though I take instrumental teaching, I am bound to say that I think they are right to adopt this solution in the present circumstances.

What else could they do? How could they justify teaching the violin on demand, when other quite central provision, like the teaching of modern languages, or the use of textbooks, has to be abandoned? It is far easier for those parents who are rich enough to arrange private violin lessons for their then to arrange for their children to be taught French or German in a proper way.

Philosophers have defined envy as the condition of the person who envies that nobody should have a benefit, if he himself cannot have it. These parents prefer that nobody should have a benefit if everyone cannot have it free, even when there are numbers of



Mary Warnock

people who are perfectly willing to pay. This is ideology, not envy. And, as is so often the case with ideology, it runs counter to good practice, practice which may not be logical, or wholly correct, but which has worked well for years.

Certainly in many I.e.s. the system of port-payment, or subsidised lessons has a long history, and has always been

combined with a generous attitude towards those who, perhaps on the advice of the school, have been thought to be unable to pay their share. And the great merit of this system has been that it has benefited not only the exceptional child, but the middle-of-the-road rank-and-file musician as well.

As elsewhere in the educational system, so in musical education it often seems that it is the moderately talented, the "ordinary" child, who is most likely to suffer when things are bad. Yet it is through the education of the ordinary that overall educational standards are raised. What is greatly to be feared is that, one way or another, our musical education will regress, and return to the kind of state it used to be in before the Second World War.

The difference between then and now is staggering, and we must not forget it. In those days the school orchestra, even in schools which prided themselves on their music, was generally a more than one school orchestra in any school. There were no county orchestras, no Saturday morning music schools, no training in general musicianship, no presumption that children would be interested in music

of any kind. And of course the vast difference in musical competence at school is reflected both in undergraduate music, and in the real world. Even those who don't continue to play their instruments after school or higher education, nevertheless make up the informed and critical audience, without which music could not continue.

But what seems most paradoxical about the position of the ideologies is not the damage they may do to the music of the country as a whole, but the degree to which they will deprive themselves and other parents of the satisfactions associated with the old system.

By contributing to the costs, parents gave themselves a genuine stake in the musical life of their locality. Many of them acted as administrators of the Saturday schools; many became lifelong friends of the teachers whom they partly paid. It was a working and good relationship. To price it all out of existence, when there are hundreds of people willing and anxious to pay, seems the height of folly.

Let us hope that Ministers will listen to those who urge them to change the law, and change it quickly, before the damage is too widespread.

DIARY

The dog collars restraining

To Belfast to confer about Northern Ireland's segregated schools and integrated colleges under the auspices of a rare, unsectarian sponsor - the Irish Council for Educational Research.

We'd come primarily to look at further education and the new "polytechnicity", but we also looked at one religiously-sensitive area - teacher training. The unforgettable experience of taking evidence from the two sides of the religious divide convinced me that I wouldn't see the integration of Northern Irish schools in my lifetime.

Those in charge of the two systems are too fiercely sure of themselves to be expected to get into bed together for some generations to come. They're truly formidable folk.

In the Catholic corner, we heard from Mrs. Catherine Longman, the unofficial adviser on education to the Bishop of Connor and Down, and quite the most fearsome conviction politician I have ever met - not excluding the present Prime Minister; in the other one, we listened to a clutch of hefty, male, clerical six-footers - Presbyterian, Church of Ireland, Methodist - with huge dog collars and Protestant faith to match.

Everyone professed ecumenical enthusiasm, but almost the only practical effect of this zeal turned out to be a willingness to experiment with a little integrated teaching practice and some field studies in geography. We also heard from a brave little organization called "All Children Together" which had founded an integrated school, but nobody seemed to take it very seriously.

So it was with some complicity that I told my conference of trade unionists that we were right to concentrate on colleges and universities where students can mix unencumbered by religious imperatives.

These colleges and universities seem to be going very well. My only gentle criticism was a certain colonial dependence on foreigners to run them. It is true that Peter Froggatt, the vice-chancellor of Queen's, Belfast, is an Ulsterman through and through; but elsewhere, for some inexplicable reason, they seem to prefer Yorkshiremen.

First, there is a Mr Birley, who got the job in charge of the new polytechnicity



Street graffiti: reflecting the deep Ulster divide

ty, which is shortly to be christened "The University of Ulster"; then there's Sir Wilfred Cockcroft (he of the Mafra Report) who used to run the New University of Ulster (i.e. now the old one) and earned a new examination quango off Sir Keith Joseph when he was squeezed out by Mr Birley; then there's a Mr Altersky who came from Huddersfield to run the North West college of Technology in Derry, and a Mr Pomret who runs the Protestant teacher training college, Stranmillis, who is shortly to retire to Yorkshire.

So as a bumble Leeds Loiser myself, I felt quite at home disposing of Northern Ireland's further and higher education. For the really big jobs, however, they eschew Yorkshiremen and go for English titled folk.

A sexist's come-uppance

An Ulster endpiece, about a young lady at the integrated Armagh Technical College, to be fair to the Northern Irish segregated school system. It does produce more and better O and A levels than the English average.

Introduced to my young lady, at a function, put on for the benefit of the Select Committee, I enquired of her plans for further or higher education. She gave up her distinctive stature with my sexist and colonialist assumptions, I volunteered: "Perhaps St Mary's College of Education?"

In reply that, well, actually, she had an offer from King's College, Cambridge, which she properly and soberly turned down.

Christopher Price

Black Papermates

I've been taking another look at *Standards in English Schools* by John Marks, Caroline Cox and Maciej Pomian-Szednicki. It's Maciej Pomian-Szednicki who fascinates me. I've been taking another look at *Standards in English Schools* by John Marks, Caroline Cox and Maciej Pomian-Szednicki. It's Maciej Pomian-Szednicki who fascinates me.

I felt that if they really wanted to recapture such a tradition, they would best do so back in Central Europe where it thrived under the fascists and thrives under the communists. I was immediately seized by a sense of anti-semitism and manifold other sins and wickedness not only by the odd Black Papermate present but also by all my liberal friends.

So I shall quell the temptation to resurrect that argument. Instead, I

report a little research of my own conducted late last Friday night with a (not wholly random) sample of Yorkshire-grammar-school-educated boys, now trembling around the age of the menopause.

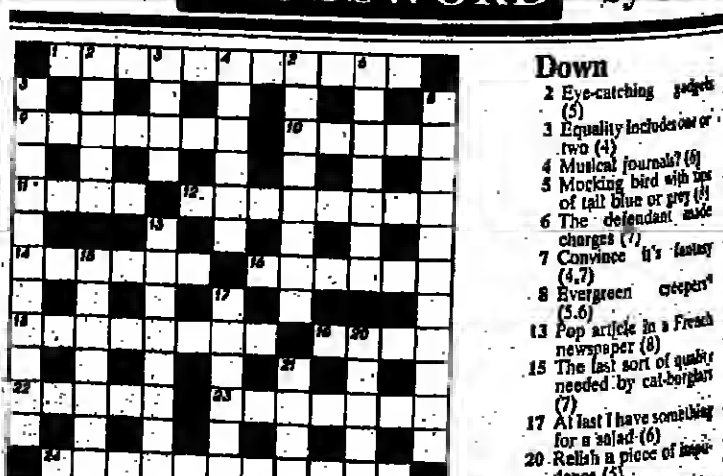
We unanimously concluded that the best description of the general schools we attended was "Schools Modern Writ Old". It seemed to us retrospect that we had been subject to an arid and irrelevant set of experiences from which a

It certainly did not leave us fit and enough to evaluate Marks, Cox or Pomian-Szednicki; but we all felt we had gained sufficient intuitive wisdom to recognize a bit of nostalgia when we saw it.



Rhodes Boys' school priding Russia

No 124 CROSSWORD by Rufus



- Across**
- 1 Trade man's entrance (4,7)
 - 2 Loving having a party (7)
 - 3 Fall into part of them (5)
 - 4 Old Irish sea is, reformed (4)
 - 5 They should be able to identify any salts in a mixture (8)
 - 6 Bearing a flower in (4,7)
 - 7 March of April (6)
 - 8 They may have been banished for changing their names (6)
 - 9 Heading for the frozen wastes - or stuck to them (5,7)
 - 10 Is taken back between a double land mass (4)
 - 11 Dime football team (5)
 - 12 Die of cold (3,4)
 - 13 It's triumphant to last (4,7)
- Down**
- 1 Eye-catching gadget (5)
 - 2 Equality includes us or not (4)
 - 3 Musical journal (6)
 - 4 Mocking bird with an of tail blue or grey (11)
 - 5 The defendant, who charges (7)
 - 6 Commerce is a fancy (4,7)
 - 7 Evergreen concept (5,6)
 - 8 Pop article in a French newspaper (6)
 - 9 The last sort of quality needed by a politician (7)
 - 10 At last I have something for a salad (6)
 - 11 A piece of logic device (5)
 - 12 You can still tempt me (4)
 - 13 Solution to Puzzle No 123

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Blacks more likely to have A levels

Young black men are more likely than young whites to have A levels. City and Oulds, or higher qualifications, according to a new national study by the Department of Employment.

In a sample of 11,200 young people aged 16 to 25, 25 per cent of West Indian and Asian men had an A level, City and Oulds, or higher qualification, compared with only 20 per cent of white men. Among women the figures were 17 per cent and 19 per cent respectively.

Within the non-white group, those who had been born outside Britain were much more likely to have A

levels, City and Oulds, or higher qualifications than those born and brought up here, though the total size of the non-white group (about 600) was too small for hard and fast conclusions.

About 15 per cent of both white and non-white men had O level as their best qualification, compared with 26 per cent of white and 21 per cent of non-white women.

There was little difference in the proportion of white and non-white

men with no qualifications, although in the case of the women the proportion of unqualified non-whites (36 per cent) was noticeably larger than the whites.

In a separate table on the economic status of 7,500 young people aged 16 to 24, the DE statisticians show that both West Indians and Asians are more likely to be still at school or in full-time education than their white counterparts. This is particularly true for Asians - 36 per cent of Asian men

were students (compared with 17 per cent of whites), and 26 per cent of Asian women (compared with 16 per cent of whites). However the numbers in each category were very small.

Youth unemployment in 1981 was no worse among Asians than whites, but markedly worse among West Indians - 28 per cent of men were registered as out of work (compared with 15 per cent of whites), and 16 per cent of women (compared with 11 per cent

of whites). The proportion of Asian women aged 16 to 24 who were in jobs or looking for work was lowest of all the groups. "These rates are affected by differences between the rates for married and non-married women, the study says."

The DE figures were drawn from the 1981 Labour Force Survey, a sample survey of 80,000 households in Britain which included questions about the ethnic origins of those involved.

Phillip Venning

Sex equality watchdogs claim 11-plus favours boys

by Hilary Wilce and Paul McGill

Even-plus selection procedures are being under renewed and vigorous fire from critics who allege that they discriminate against girls.

Two cases are being brought to court in England, and a big dispute has erupted in Northern Ireland about how tests are scored.

The allegations come at a time when a number of local education authorities are considering reintroducing selective schools (see page 3).

At present a third of local authorities in England and Wales retain some selection, and many weight their test scores to allow for the fact that girls tend to perform better than boys at this age. There have been persistent rumours that this could contravene the sex discrimination legislation, but this has not been tested in court.

However, a case due to come before Lincolnshire County Court is likely to prove a key test of principle. It is being brought by a parent who alleges his daughter was refused a place at a girls' grammar school even though her test scores were higher than those of boys admitted to a neighbouring boys' grammar school.

Such cases have not been brought in the past because Section 26 of the Sex Discrimination Act exempts single sex institutions from complying with the law in this respect, but the case of discrimination is thought to be strengthened by the passing of the 1980 Education Act, which allows parents a greater say over which school they send their children to.

The hearing has been delayed because the Equal Opportunities Commission, which is backing the parent, is backing the parent, and is preparing

detailed evidence. Commonly held assumptions about pupils' development and achievements, and how these are tested, could be challenged in court.

The EOC is also giving its backing to a case being brought in the London borough of Bromley by a parent and a friend of two girls' primary pupils. They alleged that the girls were kept back a class during their final year at a voluntary primary school, that this was done purely on the basis on their sex, and that as a result they missed the educational benefits of the full final year's curriculum. A date has not yet been set for the hearing.

Meanwhile, the Equal Opportunities Commission for Northern Ireland has highlighted the fact that the way in which 11-plus scores are weighted in the province could be unlawful under the Sex Discrimination Order of 1976. The point is made in a new booklet on equal opportunities recently sent to every school.

The Department of Education in Northern Ireland marks boys and girls separately. The top grade is given to the highest 10 per cent of boys and the highest 10 per cent of girls. The borderline M grade is given to the next 10 per cent of boys and 10 per cent of girls.

A spokesman for the department said it was a system that had been administered for years without complaint.

However, Ms Evelyn Collins, the commission's senior education officer, said the commission would be likely to back a strong case which it felt could establish a principle in this area. It would watch with close interest the court cases in England.



Cracking up: teacher Ann Hack in one of the rooms where plaster is peeling off at Brackenbury infants school in Portland, Dorset. Conditions at the 135-year-old school are acknowledged to be bad and Dorset education officials are seeking another site for the school. The school is on a steep hill and the playground is not level. Brackenbury is one of three primaries in the county being earmarked for top priority improvements.

At the NUT primary schools conference last week, Mr Trevor Scholey, chief inspector for Northampton, said that some of Britain's schools are literally falling down because of the lack of money spent on maintenance.

Political tone to NUT poll

by Richard Garner

The leadership election campaign in the National Union of Teachers has taken on a more overtly political tone than in previous years.

The manifestos published by each of the candidates for the two vice-presidential posts and for that of NUT treasurer show deep divisions about the direction the union should pursue.

In the vice-presidency elections, Ms Carole Regan, one of the five candidates, calls for the union to campaign for the return of a Labour government and eventually to affiliate to the Labour party. She also wants it to support unilateral disarmament.

Ms Regan, treasurer of the Inner London Teachers' Association of the NUT, is one of two candidates put by the Socialist Teachers' Alliance.

The other is Mr Ken Jones, outer London executive member. He emphasizes the need for union unity in fighting cuts.

However, Mr Brian White, an executive member from Dorset, opposes to any increased involvement in party politics.

Mr Bob Kiebardson, chairman of the union's action committee and an inner London executive member, and Mr Gordon Green, executive member for the West Midlands - appeal for unity and adopt a centre left approach.

Large classes

More than one-fifth of the pupils at maintained schools in England are still taught in classes of more than 30, according to figures released last week by the Department of Education. And 170,000 pupils are in classes of more than 40.

Mr Bob Dunn, junior minister for schools, said in a Commons reply that last January nearly 1.3m pupils were being taught in classes of between 31 and 35 - 400,000 of those were in secondary schools and 900,000 in primary.

In addition, 140,000 were in classes of between 36 and 40 pupils - most of them (120,500) being in primary schools. But it is secondary schools that have the biggest number of pupils in very large classes - 110,000 - out of 170,000 pupils in classes of more than 40.

THIS WEEK

- COMMENT 2
SCHOOL TO WORK 10
NOTICEBOARD 11
LETTERS 12,13
OVERSEAS NEWS 13,14
PERSONAL CHRISTOPHER 15
DIARY AND CROSSWORD 80
CLASSIFIED 28

Pay comparison

The National Union of Teachers is drawing up comparisons between teachers and other professions.

Sutton revisited

Philip Venning visits Sutton's schools in the wake of a controversial HMI report.

Profile

David Lister meets Labour's new education spokesman Giles Radice.



Platform

Peter Newsum: why the LEA envisaged in the White Paper cannot work

Maths motives

Are the sums children are asked to do real enough

Arts/Books

John Vaizey on a new biography of Keynes; Juliet Cuthbert on race relations; television previews of *Martin Luther*; *Heretic*, *Horizon* on language

learning and Farrukh Dhandy's new series of plays, Children's literature.

Textbooks: Bryden Keanan offers a critical guide to the competing courses in secondary school French; maths; economics.

Resources/Software/Media

Peter Turner on the role of cable in community education; Philip Hytch on a pack for primary science; reviews of computer

software to teach electronics and two business simulations; Hugh David on ITV children's programmes

25-27

EXTRA

Computers in education: Review of the Microelectronics Educational Programme; a look at software publishing; a report on the diversion of mathematics teachers into computer studies; why girls are opting out of computers; computers in special education and teacher training

31-50

Hard work now: Utopia can wait

Seeing what a lottery the parliamentary Labour Party's elections can be, and the juggling involved in Shadow Cabinet making, education has come off pretty well in acquiring Mr Giles Radice as Mr Kinnock's front bench spokesman on matters educational. He starts with the political handicap (for a Labour man) of being an old Wykehamist required to demonstrate his commitment to the maintained schools, but his own children duly attended comprehensives: there will be some who will never forgive his clerical origins, but provided he does not feel obliged to overcompensate by adopting an excessively hostile attitude towards the independent sector, what is going to be important are his brains, commonsense, and political finesse, not his old school tie.

What Labour now needs in an education spokesman is a good parliamentarian who will devote himself to the solid tasks of Opposition, meeting Sir Keith Joseph at all points along the line with constructive criticism and cross examination. Labour needs to accept that for the next two or three years the initiative lies with Sir Keith, and concentrate on subjecting current Government programmes to strenuous analysis and review.

This means a lot of hard work on the boring details of policy. It means understanding the basic essentials of government finance. It means not leaving the argument about penalties for "overspending" and the introduction of rate-capping to Dr John Cunningham, the highly competent recipient of the Environment Shadow post. The spokesman for education and the environment need to break new ground by working really closely together, instead of taking on a chameleon-like - the mutual hostilities of their Shadow departments.

The irresponsibilities of opposition do not extend to an option to set aside the demographic trend and falling student rolls. Mr Radice has to master this topic, too, and follow through the consequences at every level and in every branch of the education service. But all this is pabulum. What is Mr Radice to do to shape Labour's future plans for education? It is clear that in general terms what Labour needs now is

a moratorium on policy discussion. Not literally, of course: intelligent opposition means a continuing discussion of alternatives. But it would be no bad thing if Labour could oppose the Conservatives without countering every Government initiative with instant and categorical commitments to put everything into reverse the moment the whirlwind of political fortune turns the ins out and brings the Outs in.

In the long term it must be Mr Radice's aim to take Labour into the next General Election with a feasible and moderate education programme - a programme that hears some remote chance of being carried out, and one which turns as much as possible of what is being done now to creative purposes. This may be anathema to those who feel obliged to convince themselves that everything done in the name of their political opponents is outrageous by definition. This may be the rhetoric which Mr Radice feels constrained to adopt, but he is too shrewd a man to believe it himself, and it is important that he should distinguish in his own mind between those developments which arise from the present Secretary of State's ideology, and those which represent less contentious responses to the changing environment outside the narrow field of education.

This is particularly true in regard to the developments now taking place in the secondary school curriculum and the examinations which control it and in the structures of youth training being erected for those who leave school at the earliest legal age. Conservative ministers are trying to breathe new life into the grammar school idea and reverse the trend away from selection which stretches back over the past 40 years. They may well have some success.

The Labour opposition will, no doubt, find itself investing much energy and indignation in mounting a counter-campaign. This will be one of Mr Radice's great opportunities. He can take it in one of two ways. One would be to mobilise all the traditional arguments and mount an uncritical defence of the comprehensive school, in terms which would warm the hearts of the faithful without winning over any doubters. This would be the safe course. The more

adventurous would be to take up the arguments raised by Professor Colin MacCabe, in his Channel 4 Opinion piece (TES September 9, and printed in full in the *New Statesman*, September 9) and pursue the interlinked questions about curriculum options, secondary school examinations and higher education requirements. While this would be the more dangerous response, it might also be the more rewarding.

If Labour simply restates the orthodoxies of the 1960s instead of taking an unvarnished look at how things are now and how they might be in the nineties, they will not win the argument, even if there is always a chance in our capricious electoral system that they may one day find themselves winning the vote.

The future of the Youth Training Scheme will be demand in Mr Radice's attention. Labour has so far given the YTS an important measure of ambivalent support. As it now gets under way, it will be important to maintain a flow of constructive criticism - the accent again being on the word constructive. The failure of the YTS to meet its original targets needs to be closely examined and the appropriate lessons drawn. Is this because the extent of the change in employers' habits which YTS demanded was too great to achieve in one year? Or are there more fundamental reasons why the YTS seems to be conforming more to the pattern outlined in the Government's own White Paper than to the wider ambitions of the MSC Task Force? And how could YTS, in any form, be fitted into Labour's aims for a comprehensive policy for youth?

The improved showing of the Labour Party since Mr Kinnock took over has been aided by Mrs Thatcher's own misfortunes, and by the charitable but erroneous belief that changes in the leadership have removed the underlying causes of Labour's internal disarray. But the wish behind this wishful thinking is sound: everyone (outside the ranks of Conservative partisans) must want to see an improvement in the quality of opposition performance and if this is what Mr Kinnock and his new team can offer, good luck to them.

COMMENT

The gift of tongues

The joint response of the university Vice-Chancellors' Committee and the Standing Conference on University Entrance (page 3) to the Government's consultative paper on foreign languages in schools is a welcome sign that the universities recognize they have a part to play, as well as a right to a say, in school language learning which is in such an appalling plight.

The universities have, of course, taken some steps of their own to broaden language learning opportunities through combined language and technology or commerce courses and through the establishment of language teaching centres. For this reason, it is not surprising to find them taking an interest in the language skills of a wider range of students.

They commend two developments in sixth-form language work: common cores for all language A levels and new intermediate exams which could encourage more foreign language study beyond O level. Common cores at A level have been proposed before for subjects like maths and physics but usually with a view to greater homogeneity in student intakes.

The cores proposed for modern languages would seem to have an additional function. What is proposed is "to define the language content which could be the common and central component of all syllabuses in each foreign language at A level and be a means of reducing the scope for set texts to be taught and examined in English." The language cores proposed would not, then, just standardize A level work but would also change its



The danger is that these developments could simply escalate the demands being made on sixth formers laid upon language were not accompanied by any significant reduction in the literary demands, or if I levels were to become an additional burden rather than part of another configuration of courses and exams within the amount of time now absorbed by two or three A levels.

The ability of the VCs and SCUE to deliver on any such proposals has to be questioned. University selection is carried out by individual subject departments according to their own criteria. It is in their informal bazaar that the currency of any new courses will be proven.

programme makers' message - that in the first stages of language acquisition, exercises in practical communication skills are far more productive than formal study of vocabulary and grammar - will have come as no surprise to those who have been preaching this for a long time.

But the programme also raised the important question of motivation - there is little wonder that young people in some other countries find our language more compulsive than our young people do theirs since so much of their popular culture - notably TV and pop songs - is rendered in English.

The programme's answer to this included the sort of "total language immersion" schemes tried in Canadian schools to make English speakers fluent in French. Though there may not be the same strong bicultural justification for this in British schools, the Celtic fringes excepted, there is probably room for more experimentation in limited or periodic immersion, and certainly room for more contacts with foreign language speakers to give the language some reality.

In that respect, the vice-chancellors are certainly right to call for renewed encouragement for the foreign languages scheme.

In the DES consultative paper - which the VCs brand as "defeatist" in its treatment of minority languages - a national languages policy is again proposed. As it points out, there are serious issues to be resolved about the contribution of language learning to efforts in language learning. But above all, if language learning in schools is to be revitalized, to form a real part of a common curriculum and supply work challenges for I and A level, more consideration needs to be given to how to make it more fulfilling and (dare one say it) more fun, as well as more relevant.

Morrison back-tracks

This week sees a minor victory for common sense and one in the eye for one of Mrs Thatcher's most blinkered and prejudiced ministers. Mr Peter Morrison (page 3) has redrafted his guidelines for YTS and given up his attempt to ban all discussion of social questions in courses provided as part of the youth training scheme.

His first draft - which he defended vigorously at the Conservative Party Conference - was aimed at keeping YTS students' heads down to the express tasks of training for a job from which social education in any form could only be regarded as an unforgivable distraction.

Fortunately, the Manpower Services Commission, reflecting both sides of industry, saw off the potty Caesar of St James Square, but his revised wording is bad enough. No scheme should be accepted, forsooth, which "would be likely to cause public controversy". Phrases as loose as that addressed to a body like the MSC which often acts first and thinks afterwards, need watching.

NO COMMENT

"It is requested that the following corrections be made in the copy/copies of the above named HMI inspectors' report sent to you on 30 August 1983. Page 10 S.1. line 8. Delete - the principal, insert - a student." From a correction slip from HMI Support Services, DES.

Second opinion Access to closed minds, not buildings

The campaign launched this week (page 6) by a clutch of pressure groups to enforce the legal right to full-time education between the ages of 16 and 19 for young people with special needs is asking for the bare minimum.

As the campaign document points out, this is an area where immediate action on a huge scale, although it has been long overdue, is still needed to ease the transition to adult life and work more than most.

This was one of the main thrusts of the Warnock Report, which was virtually ignored in the subsequent legislation. The relevant paragraphs, in fact, touched such a raw nerve that the issue was conveniently shelved until the whole legal basis of further education could be untangled.

Many civil servant hours and pages later, the only clear guidance was that every young person is entitled to full-time education in either school or further education college from 16 to 19, but that the L.E.A. rather than the parent could decide which it should be. Beyond that the position remains fudged, many local authorities are unwilling to offer either alternative, and further Government action seems unlikely unless provoked by a successful test case. That would have to be brought by parents prepared - and legal-aided - to brave the trauma of a court case which would probably not produce reforms in time to benefit their own child. Policy-making by a fairly shoddy form of inertia, in fact.

The first aims of the joint campaign are minimal in that they seek at this stage only enforcement of the present law, and action to make parents and their disabled children aware of their rights - to create the demand that is often discouraged through ignorance.

In many cases, L.E.A.s will find it easier and cheaper to let them stay on in the over-protected world of a special school, rather than provide the special FE courses, or access to normal courses, which could give a better introduction to life and work.

Such courses do have a cost in teacher preparation as well as resources, which is what deters some L.E.A.s from meeting them, and the Secretary of State from issuing the circular demanded this week. But such a circular could usefully offer advice on how to do it, and changing attitudes costs little - "access to closed minds, rather than closed buildings, is what we seek" said one of the campaigners.

In last week's TES there was a report of a new DHSS ruling discouraging handicapped young people from attending courses which might have prepared them for work by refusing them benefits.

As the director of the Spastics Society, Timothy Yeo, MP, points out, such courses save money in the long run on unemployment and social benefits, but that sort of lateral thinking has little appeal to departmental budget-makers.

Maybe a joint approach to social policy for that age-group with special needs should be a longer-term aim for the new campaigners. We also reported last week on a large-scale study carried out in the last 18 months by the Royal Association for Disability and Rehabilitation of 2000 physically and sensory handicapped young people aged 13-19. Published with exemplary speed to try to remain relevant and benefit its own subjects, it uncovered a sorry story of shortage of specialist careers officers, social isolation and widespread lack of training for independent living, let alone work.

It is only realistic to keep in mind that the 1981 Act barely began to implement Warnock. Proper provision for further education stays high on the agenda.

Patricia Rowan

Minister relents over YTS social education ban

by Mark Jackson

Mr Peter Morrison, Minister of State at the Department of Employment, has been forced to drop his attempt to ban social education from the Youth Training Scheme. He has agreed to guidelines for the scheme which exclude only specific political or "publicly controversial" activity.

Two months ago Mr Morrison told the Manpower Services Commission to enforce as quickly as possible guidelines he had drafted which prohibited, in addition to political activity, any matters relating to the organization or functioning of society, from being included in YTS off-the-job training. The guidelines would have affected practically every college YTS course in the country, as well as some courses run by employers themselves.



Peter Morrison has original proposals opposed by employers and unions.

The Minister's action drew strong protests from employers as well as educational bodies and the unions, and the Youth Training Board endorsed a recommendation of its professional advisory group that the draft guidelines should be rejected.

Mr Morrison, who until the board's decision appeared to be determined to carry through his plan, explaining that the scheme was "about training for a job, not about politics", is understood to have been persuaded that he was facing a head-on collision with the Manpower Services Commissioners if he persisted.

The new draft, which says that no scheme should be accepted "if it is seen as serving political purposes or would be likely to cause public controversy, bringing the commission's impartiality into doubt" was approved by the commissioners last week.

The guidelines now prohibit:
□ action in support of a political party;
□ participation in marches or demonstrations;
□ the printing or distribution of political or publicly controversial material; and
□ any action to intervene in an industrial dispute.

The TUC has obtained assurance from MSC officials that the ban on intervention in industrial disputes will not in any way prevent trainees taking industrial action at their own workplace.

Police earning more than teachers

by Richard Garner

Most of Britain's 410,000 teachers are being paid substantially less per week than policemen on the beat, according to evidence being compiled by the National Union of Teachers in preparation for next year's salary negotiations. Figures show that a constable on maximum salary - excluding special allowances such as for living accommodation - earns £10,620 a year or £1,837 per year more than a teacher on the maximum of Scale One, who receives £8,784 a year.

The figures also show that nearly a third of the profession are earning salaries on scale two and 29.3 per cent are paid Scale One rates - all of them therefore receiving less than £9,112 a year. The figures are being compiled by

the union as part of the comparisons on which discussions on next year's pay claims will be based. Local education authority representatives have said they will present details on their ability to pay and the level of unemployment in the teaching profession in comparison with other occupations.

The NUT figures also show that an army corporal on maximum salary earns £4,924 a year more than the teacher on the maximum of Scale One, who receives £8,784 a year.

It says teachers' pay has been substantially eroded by cash limits policies, adding: "The principle of comparability is already accepted for other public service groups but not yet for teachers. 'The police are guaranteed rises in

line with the increase in average earnings: the fire service is kept in line with the top 25 per cent of manual workers: for doctors and dentists and the armed forces, there are pay review bodies which take account of the pay movements of employees judged to be comparable."

Leaders of the NUT have yet to decide on next year's pay claim - but the two key elements of it will be the establishment and maintenance of professional salary levels, and a reform of the present salary structure.

Progress on the second of these aims will hinge on the outcome of the three-day residential session between teachers' leaders and local authority representatives next month.

The micro fanatics

Children are arriving early at school and staying behind after lessons to play computer games, it was claimed this week.

Mr Trevor Fletcher, HMI inspector with special responsibility for mathematics, told the National Union of Teachers' national education conference on middle schools at Stoke Rochford: "Children get to school before eight in the morning and don't go home until the caretaker throws them out. We are worried."

Of the children getting involved with the microcomputers, boys were more active than girls. "The girls of the girls are brushed out of the way in the rush," Mr Fletcher said. "In more than one school, special girls' nights were being held to compensate for this."

Moreover, he added, in some schools computers had been put to cupboards and were not coming out until the staff were fearful how to use them - and that doesn't look like the happening very

Modern languages' decline alarms vice-chancellors

An anguished plea to the Government to rescue modern languages in schools is made this week by the vice-chancellors of Britain's universities.

The universities are worried not only that the proportion of school-leavers taking a foreign language A level has fallen (especially among boys), but that the numbers studying languages other than French at any level are declining "to a catastrophically low point".

This decline is leading to cultural impoverishment and runs counter to the national economic interest, the vice-chancellors say in their response to the Government's consultative paper *Foreign Language in the School Curriculum*.

"They do not accept the paper's 'defeatism' over the scope for more than one foreign language to be studied. 'If in Wales, time can be found for both Welsh and a foreign language, then in England it should be possible for many more pupils to study two foreign languages.'"

To encourage more pupils to study languages in the sixth form, they

propose the establishment of a minimum core syllabus at A level which stresses the importance of speaking and writing the language fluently, combined with the introduction of an intermediate level examination worth half an A level (a Government statement on A levels is expected before Christmas).

But these two changes alone would not be enough to rescue languages from the present precarious position, the universities stress. The Government must adopt a coordinated strategy involving more teaching posts, more in-service training and more research.

The vice-chancellors call for the revival of languages like Spanish and German through the appointment of part-time specialists, and the restoration of the language assistants' programme which has been much reduced in recent years.

Employers should also play their part by emphasizing the value of foreign languages, the vice-chancellors say.

NEWS

Tory quits over selection

by Nick Wood

A political row blew up this week as the London borough of Redbridge followed Solihull's lead and became the second Conservative-controlled authority to announce plans to open new grammar schools.

As soon as the plans were made public, Mr Leslie Bridgeman, Tory chairman of the education committee, resigned, to be replaced by Mr John Ramsden, who has put his name to a document supporting the introduction of a fully selective system in the borough.

Mr Bridgeman said: "I know from opinions expressed and from soundings among my colleagues on the council that the greater number would prefer to introduce a system of secondary education in the borough embodying full selection with grammar schools that will take the most able 25 per cent of pupils."

"My views differ from those of many of my colleagues... I cannot sustain the position of remaining as chairman of the committee."

In common with other authorities, Redbridge is being forced to reconsider its secondary school system because of falling rolls. It currently has two single-sex grammar schools taking the most able 10 per cent of children and 12 11-18 comprehensives.

Last week's meeting of the schools subcommittee examined four options for reorganizing secondary education. Members backed a proposal that would increase the number of grammar schools to four and trim the remaining schools to nine 11-16 high schools.

The subject will be debated by the full council in 10 days time before going out for consultation. If all goes according to plan, the new grammars, probably on the sites of Beal and Valentines comprehensives, will open in September 1985.

Although the 11-plus exam would be retained, it is unlikely the new grammars and high schools would be carbon copies of their predecessors, which Redbridge scrapped more than 10 years ago when Mr Bridgeman was

chairman. Mr Ramsden wants all the high schools to re-assess their pupils at 13 with a view to transferring some of them to the grammars, which would hold in reserve an extra 60 places for late-developers. He also wants all the high schools to provide a full-blown system of vocational education in addition to a core of basic subjects for the 13 to 16 age group.

Children capable of taking A levels would switch to the grammars at 16, he says. Money raised by selling off surplus school buildings would be ploughed back into supplying the equipment needed for vocational courses and for the extra staff required for teaching practical subjects.

● An HMI report on Beal School, published this week, concludes that as a comprehensive it has experienced a decline in the academic ability of its intake. Even so it has achieved a "good degree of success" in public exams and a high proportion of pupils stay on to the sixth. Further report next week.

Liverpool submits secondary plan

Liverpool's reorganization scheme for its county secondary schools has finally landed on the desk of Sir Keith Joseph, the Education Secretary - 16 months after he first demanded it.

The scheme was passed by the city council last Wednesday after it had been rushed through a special meeting of the education committee the previous day.

Now the city's Labour leaders must wait to see if Sir Keith's impatience for Liverpool to rationalize its half-empty schools will override his anticipated dislike for a plan consisting entirely of mixed comprehensives with small sixth-forms, or whether he will demand

last-minute changes.

Under the plan, the city's 25 secondary schools, including two grammar and 11 single-sex, would close next summer to make way for 17 neighbourhood comprehensives. (The original plan was for 16, but the council bowed to pressure to keep one more.) Each school would have six forms of entry, giving 900 places for 11 to 16-year-olds, with 80 to 100 in the sixth-form. One of the schools would be Croxteth Community School, which is currently independent.

But Sir Keith may be influenced by parental opposition to the plan, especially over the loss of single-sex schools

in the county sector. An estimated 1,000 demonstrated outside the city council last week and the authority has received more than 20,000 objections.

By meeting the deadline for a rationalization plan, the city has managed to avoid a DES takeover of its schools.

College principals in Liverpool have just agreed to make savings worth some £315,000 by next Easter, through not filling posts and cutting the hours worked by part-time staff.

An expected shortfall of between £500,000 and £750,000 in funds for YTS places will be met out of the contingency fund.



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TES 83

The quiet revolution is over

The scale of the changes that have taken place in London's education service over the past decade, both in form and in content, constitute a revolution. With a few painful exceptions, that revolution was achieved by consent.

The most important single idea of the early and middle part of those years, the dark thread that ran through them, was the absolute and overriding necessity to arrest or, in some cases, forestall a decline, at time seen as a potential collapse, in the quality of inner London's education service.

If this seems starkly put, it is meant to be. I can best explain the reasons for it by describing the condition of inner London's primary schools in the early 1970s. In the 1920s and 30s London had recruited an elite corps of teachers and despite the huge disruption of the war, London's tradition of good elementary education, was thereafter initially maintained.

In the early 1960s, inner London children, on leaving primary school, were still doing considerably better than the average of the rest of the country. But it was in the mid-1960s, that four things happened.

First, the fact that 500,000 skilled workers and their above-average performing children moved out of London's inner areas.

The second move was inwards. Into the empty spaces, in particular to fill the needs of London's service industries, came families from overseas. The numbers coming in were fewer than those leaving.

The educational consequences were compounded by a third factor. A stable teaching force could have been expected to manage the change in population; even the influx into the schools of many thousands of children with not a word of English. But just as the parents and children moved, in large numbers and over a comparatively short period, so, too, did the teachers. Many moved out of London and into the suburbs, and many moved into the city.

And there was a further, more disturbing factor - the movement of children. Tidy pupil ratios devised in quiet offices of County Hall hardly seemed appropriate.

But, as the verbal reasoning figures show, by the mid-1970s, the system was moving forward again. The teachers were taking hold. ILEA, in its turn, did everything it could to hold teachers in London: staffing ratios were improved and generous monetary help was supplied. Quite calculatingly, and to avert prolonged crisis, the ILEA bought stability. In this it succeeded but the financial consequences of some of the arrangements it made are with us today.

London has a great tradition of early education. It was the task of the 1970s to reverse the threatened collapse of that tradition and then re-build the platform on which new development could be built. I believe that platform has been created.

My second illustration of the underlying need to avoid decline or even collapse concerns the conditions of London's secondary schools. Anyone visiting the corridors of some of those schools in late 1972 and early 1973 would have found the experience dispiriting. It seemed at the time that the secondary school system had additional structural problems which seemed likely to plunge the non-selective schools, by the late 1970s, into what might be an irreversible downward spiral. Put simply, the arithmetic of a selective system at a time of sharply falling numbers is deadly in its implications.

By 1973, it was known that in 1976 the 11-plus age group would be 32,000. If the tiny 25 per cent of that group were taken to the so-called grammar schools, that would mean that London's selective schools would take about 3,000 (or 38 per cent) of the 8,000 pupils in that top group.

But the real problem lay further ahead. By 1980, it could be seen that the 11-plus age group would be down to 21,000 and be still falling. We now know that in the mid 1980s the age group will be down to 18,000 before it begins slowly to rise again. But, in 1973, (and working on the 1980 figures) this meant that the top ability group would be down to 5,250 and the grammar schools would be taking about 60 per cent of it, leaving the 2,000 or so remaining 11-plus pupils of similar ability to be distributed over some 150 other schools.

That would leave the authority with an acute dilemma. Some of the large newly-built post-war comprehensives had developed strong academic traditions. If, in the fully comprehensive tradition, were even partially to be maintained, those schools would have to take virtually all of that 2,000 11-plus intake. But in what condition would that leave the remainder?

The selective schools, most of them Church schools, would be full. They would be stable, well-staffed and, a thought seldom expressed in polite educational society in those days, largely white. And aside from that, there have been those "other" schools, with heavy concentrations of black pupils in them, one by one falling in the full weight of falling numbers imposed its discipline. Educationally and socially they would become increasingly unmanageable. Market forces would not have solved the problem; such forces are simply another way of describing the problem itself.

Back in 1973 it could be seen that the ILEA's comprehensive ideals, carrying a curge of committed teachers and many thousands of children, were sailing straight towards destruction. There seemed to be no way of avoiding it; in practical and legal terms, it was impossible to close all the grammar schools, quite apart from the educational consequences of so doing. On the other hand, by late 1973, it became apparent, to some at least, that it would be equally impossible to create the large 11-18 comprehensive schools which were taken to be the only kind which would work.

The large 11-18 school, defined in the London School Plan of 1947, was a means of securing a desired educational end. Eventually the school itself came to be seen as the end rather than the means for achieving it. The necessity for the large 11-18 comprehensive school was, therefore, unquestioned.

But the only way of ending selection and avoiding destruction was to rethink the nature of the comprehensive school. In such a situation, is to eat its words. There were some tantrums blown in the end, and just in time, that is what the ILEA did.

By ending selection in 1977, the ILEA acted to prevent collapse. By building a secure platform of soundly based schools, the secondary school system was enabled to live safely through the sharp fall in numbers that lay ahead well into the 1980s.

It is a fair question to ask whether the ILEA succeeded in averting the dangers perceived in 1973 and fulfilled the aims set in 1977. In the years leading up to the ending of selection in 1977 the air was loud with cries that we were "destroying" the grammar schools and in some way wrecking the life chances of the bright working class children.

How is the matter to be judged? What happens to the ablest children, working class or otherwise, is only one test of a school system; but there is nothing unfair about such a test.

In the summer of 1978, 35 ILEA-maintained schools were selective for examination purposes. It seems reasonable to compare the pre-comprehensive summer 1978 examination results with those of 1982, the first year in which a comprehensive intake moved into an examination year. What proportion of the O level age group has been obtaining 5 good O levels since 1978? The answer is that the proportion gaining good O levels has remained almost constant. To be precise, it has fluctuated between 7.9 per cent in 1978 and 7.7 per cent in 1982.

The one thing ILEA's experience of the transition from a system to another, based on a 100 per cent sample, can be said with confidence. It is evident that a comprehensive system does as well by able children as a selective one. It does not do better but it does as well.

In saying that the dominant idea of the early 1970s was the perception that a spiral of decline had at all costs to be avoided, I do not mean to imply that all was gloom. But the deep underlying worry of those years only lifted towards the end of the decade. The threat is now not structural, it is financial.

Peter Newsam, former ILEA education officer, argues that the White Paper proposals will mark the end of the careful, and yet radical, reorganization of the authority and its policies carried out over the past 10 years



This article is an abridged version of the ILEA Lecture given yesterday at the North Westminster Community School

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It is a sound, though often neglected, principle of public administration that an authority should do first and well the things which only that authority can do. In other words, many people can make speeches about education, can run festivals, can attempt to

re-think the curriculum. But only the ILEA could tackle the structural issues.

So, over the decade, the administrative nose was kept to the structural grindstone. This meant the sad but justifiable neglect of important educational opportunities. Here are five examples of the many questions we asked ourselves and lacked the time or human resources to work through to an answer.

First, do we need schoolkeepers? Second, why not close, in a legal sense, all the special schools, including the boarding ones, leaving the children and teachers where they are and adding each to a secondary or a primary school? Third, what came to be known as the Education Officer's hundred flowers. The idea was to have all educational services concentrated at a hundred locations in pram-pushing school planning areas.

Fourth, the whole post-16 issue. Quite consciously, though some of the groundwork has been painstakingly prepared, this whole educational and structural change - the biggest for London in the 1980s - was held over. Even such developments as there were took an unconscionable time. Finally, perhaps the most important issue that was crowded out by the overriding need to hold the school system together through years of demographic and institutional upheaval, was the Teachers' Contract.

So much for the so much that was not done. The revolution by consent I am describing was achieved by concentration of administrative effort.

What of how the rate of change in ILEA was influenced? First, it became evident that there is nothing more conducive to maintaining institutional inertia than to subject an organization to a sustained attack from outside. There are two reasons for this. On the one hand, the sharpest, and certainly the most knowledgeable, critics of any institution are usually already inside it. Attacks from the outside silence them. Within the ILEA, many of the changes we wanted to bring about, including some I have already mentioned, were stifled because to initiate them implied that all was not well. And to imply that all was not well was to provide helpful ammunition to the attackers. On the other hand, merely responding to an attack can be time-consuming.

Second, the way consultation is conducted has as much to do with achieving change as the particular skills of the people carrying it out or the quality of the arguments they use in doing so. Within the ILEA, we learned the hard way to separate fact from opinion; not simply within a consultative document, but over time.

A pause in the general document. Another pause. And so it went over a pre-determined timescale. Consultation that is too short becomes an assault to be repelled. Consultation that is too long dissipates all desire to bring it to a conclusion. Getting the form and timing of consultation right was one of the ILEA's major achievements of the past decade.

Third, effect change, some mental habits have to be abandoned. Of the many that frustrate change, the confusion of means and ends is perhaps the most debilitating. There is no verb to describe this process but, if there were, it would be to "manifesto".

for it is manifesto writers who have brought the confusion of ends with means to a fine art. Time and again they ensure that perfectly possible ends are made unachievable because of the unworkable means laid down for doing so.

My point in elaborating on the manifesto problem is that the ILEA was fortunate in avoiding a comprehensive system without reducing the number of its secondary schools. Other education authorities have not been so fortunate. In conclusion, we should look at the nature of the political control necessary for running a major education authority. Looking back over more than 100 years of London's education and with direct experience of the 1970s, I believe there to be three essential conditions for the effective political leadership of the authority. I take such leadership of the authority to be a degree of continuity. Within the leading groups of elected members, there needs to be a number of people - a changing core of them - who know how the system works and what is happening within it. In the early 1970s, the collective educational knowledge of ILEA members was astounding. Something like that degree of knowledge has existed since School Board days. It is a crucial check on the over-mighty officer or inspector to be told "that is not so; think again."

A second condition is that members, with experience and interest in education, must be free to exercise a proper degree of independent judgment. Members have to apply their minds to difficult and contentious issues. To look ahead means that one cannot always be looking over one's shoulder, and that is just what people do when they are perceived or, still worse, are actually appointed as delegates of somebody else. The School Board, was, of course directly elected. In the old London County Council (LCC), members of the education committee were part of a powerful structure with wide powers and its members derived their independence from that. In the ILEA, the majority of the members are also directly elected. In the perception of several of its leading members, to be elected for the ILEA is also to be elected for the GLC, a more sensible way of putting it than the other way about.

This is a crucial point - that politicians with a main interest in education know that, if elected, they will automatically be serving on the education authority. They are not entering a lottery, they are putting themselves forward to help run the education service.

The third condition is that members should have time to do their work. Leading members of an authority with a budget of about £1,000m a year need time. Otherwise officials take over. The School Board, the LCC, the ILEA all had their members in one place and not preoccupied with other than educational matters.

Continuity, independence, time. These three conditions are necessary to enable politicians to develop a sense of the nature of power and its limitations, to acquire a skill in knowing what works and what does not.

Large-scale change in local government services, where the in-built checks to unimpeded action are formidable, is achieved by people who understand the need for the consent of at least the acquiescence of people who do not agree with them as well as the support of those who do.

These then are the conditions I believe to be necessary for effective political leadership of the ILEA. I make no comment on the present White Paper proposals for the ILEA except to say that they appear to be a recipe for ensuring that no elected person will know enough, care enough, be secure enough to have time enough to take the difficult decisions that will confront the ILEA over the next decade.

Peter Newsam is chairman of the Commission for Racial Equality

Schooling threatened by social work dispute

by Nick Wood

Schools are feeling the effects of the eight-week-old dispute involving residential social workers which has led to the closure of dozens of children's homes by councils and the transfer of several hundred children to private and voluntary institutions.

Those near homes taking in the new arrivals are having to find places for them at short notice. Many of the children are from disturbed backgrounds, which is putting extra pressure on schools.

Mr John Ogden, chief adviser to the London Boroughs Regional Children's Planning Committee, said the dispute was severely disrupting the education of many youngsters.

His field officers had told him of private homes which had failed to find schools for their newcomers because they had rejected their appeals for help.

Mr John Dossett-Davies, chief social work adviser to the National Children's Homes, which has taken in more than 100 youngsters from council homes since the dispute began, is also worried about its effects on children's education.

"Teachers will have to make allowances," he said. "Most of these children are from disturbed backgrounds and they will be upset by yet another move."

Mrs Anne Sofer, SDP member for Camden/St Pancras North on the ILEA, accused the authority's ruling "washing its hands" of the problem. "I've heard of a number of homes being closed temporarily - possibly



Devastated... a girl reveals The Holmes, from which she was forcibly evicted with 32 other children last week.

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Lodgings take up bulk of the grant

The fun fades from being a student

by Biddy Passmore

Today's students spend more on lodgings and less on having fun than their counterparts of the mid-1970s, according to a survey of student spending conducted by the National Union of Students.

The survey also found that between 50,000 and 800,000 students have less to live on than someone on £25 a week with the Youth Training Scheme.

Students on the full grant who also take full advantage of supplementary and housing benefit do have a bigger income than YTS trainees, the union says. But only 150,000 out of the 500,000 students on mandatory grants receive the full amount to which they are entitled, and most of the 700,000 students on non-advanced courses get only a grant at or below a small maintenance allowance.

Armed with the survey's findings, the NUS has asked Sir Keith Joseph, the Education Secretary, to raise the basic rate of grant next year by about 10 per cent, (an average of £5 a week) which would bring the grant for a student in London to more than £2,000. The students are also seeking the introduction of a minimum allowance of £30 per week for all further education students and YTS trainees.

The union wants a commitment to the phased abolition of the parental maintenance allowance. It is also asking for an increase in the threshold at which parents have to start contributing and a lowering of the age of dependence on parents from 25 to 21.

This is one of the most glaring and longstanding anomalies in the whole of government policy," Mr Neil Stewart, president of the union, said on Monday. "The Government could not do more than to ensure that YTS trainees were not dependent on parents for their maintenance."

The survey found that 67 per cent of the students had their grants reduced by more than 10 per cent in the last year. (47 per cent) of them

actually received the assessed amount from their parents. This is a significant drop since the last survey, carried out by the Office of Population Censuses and Surveys (OPCS) in 1974-75, which found that 73 per cent did not receive the full parental contribution.

The drop may be largely because the parents of nearly half the students dependent on a contribution now enter into a legal covenant with their children.

Vacation jobs are getting harder to find, the survey found. Only 54 per cent of students succeeded in finding work last summer and less than 20 per cent last Christmas, compared with 84 per cent and 34 per cent in 1974-75.

Many students are heavily dependent on the "liberal attitude" of their bank manager to keep them afloat, the union says. The average figure for overdrafts found in the survey was nearly £100, with figures substantially over £1,000 in some cases.

But the NUS is careful to draw a distinction between these ad hoc arrangements and the full-blown loans scheme favoured by Sir Keith Joseph. "This is not a loan, it's a student overdraft," Mr Stewart said on Monday. "Students aren't getting an abatement round their neck. With Sir Keith's figures, we're in a different ballgame altogether."

Students are paying an average of £23.68 per week to live in halls of residence and £14 for private rented accommodation, the survey found. The proportion of students' income taken up by lodging has risen from 48 per cent in 1974-75 to 59 per cent in 1982-83. But spending on alcohol, tobacco and entertainment has dropped from 14 to 11 per cent.

The union is "bitter" that the survey, which covered some 1,700 students and cost £20,000, was not carried out by the Government. Mr Stewart recalled the Education Secretary's promise before the election to carry out a major review of grants. "He's clearly trying to wriggle out of that and we're trying to hold him to it," he said.

permanently - where children have been moved away, but there doesn't seem to be any information on how many are involved and whether special arrangements have been made to pass on records and so on."

Mrs Sofer, who said she was particularly alarmed about the prospects for children studying for public exams, was speaking after questioning Mr John Fowler, vice-chairman of the schools sub-committee.

He said that information from social services departments indicated that there had been little disruption to children's schooling.

Lambeth in south London is one of the authorities most severely affected by the social workers' overtime ban in pursuit of a shorter working week and extra shift payments. It has closed nine of its 22 homes and moved around 60 children to homes outside the borough.

One 16-year-old boy has suffered directly from the dispute. He lost his schoolbooks after police and officials from Southwark Council broke into the Holmes home in Sidcup, Kent, and forcibly removed 33 children who had barricaded themselves in. The boy, who has lived there for eight years, was moved to another home but returned a few days later to search in vain among the wreckage for his books, which he said he needed for an exam.

Heads speak up for state

Five organizations representing head-teachers and college principals have joined forces to fight against the "misleading and misrepresentation" of state education.

The five, the National Association of Head Teachers, the Secondary Heads Association, the Association of Principals of Sixth Form Colleges, and the Tertiary Colleges Association, have set up a new "umbrella" organization - the Committee of Heads of Educational Institutions.

Its main aim will be "to present to government, local authorities and industry representatives an informed opinion on major educational issues, particularly those pertaining to the whole field of education for the 16 to 19 age group."

Other objectives will be to publicize "the wide practice and high attainment in 16 to 19 education" and "present a body of opinion that government, industry and higher education will be happy to consult."

The committee has been established on the initiative of the National Association of Head Teachers.

Union says 60,000 teachers face the sack

As many as 60,000 teachers' jobs could be threatened in the next financial year because of planned economies in education spending, a teachers' union claimed yesterday.

The National Association of Schoolmasters/Union of Women Teachers made the claim in a pamphlet distributed to all MPs on the eve of the Cabinet's consideration of further spending economies.

Battleground DES where three ideologies wage ceaseless war

Three competing power groups with conflicting ideologies vie for control at the Department of Education, Professor Denis Lawton, director of the University of London Institute of Education, said this week.

He called it a mistake to think of the DES as a monolith single-mindedly tightening its grip on the school curriculum. Although the trend towards centralist policies continued, the department's apparent unity of purpose concealed growing tensions as politicians, bureaucrats and HMIs sought to impose their differing ideologies.

It was no longer satisfactory to think of the DES as the "central authority in education", said Professor Lawton, who was giving this year's William Verker Lecture. "We should subdivide the central authority into three separate power groups - politicians, bureaucrats and the professional HMIs. They may or may not agree on important educational issues."

Two important documents on the school curriculum, *A Framework for the School Curriculum*, the work of officials, and *A View of the Curriculum*

produced by HMI, exposed the growing tension between the two groups as the former's commitment to "bureaucratic efficiency" clashed with the latter's concern with "professional quality".

Professor Lawton argued that his analysts could help teachers unravel the differing strands of thinking implicit in government statements on key educational issues.

"For example, on curriculum we might differentiate between the politicians' addition to standards, the DES (officials) concern for core and options, the HMI desire for a common curriculum."

"On the Assessment of Performance Unit, the politicians' viewpoint is something like a return to 'payment by results', the DES would be concerned with monitoring schools and the general questions of efficiency; whereas the HMI would see the APU as a means of improving the curriculum."

"I am suggesting the central authority should be treated as a 'salon system', rather than a unified consensus group."

SHA seeks gradual cane ban

by Richard Garner

Sir Keith Joseph, the Education Secretary, was told this week to set a three-year deadline for the abolition of corporal punishment in schools.

During this time a national working party should be set up to discuss discipline problems, says the Secondary Heads Association.

The SHA's move follows a suggestion in a DES consultative paper that parents in each school should have the right to tell heads their child should not be caned. The association's executive decided last week that this would be "totally unworkable."

Now SHA has written to Sir Keith saying: "The association believes that an agreed date giving a three-year time span for the phasing out and removing of this sanction in all schools should be set."

It adds: "If corporal punishment were to be withdrawn as a sanction overnight and without adequate preparation, it would produce an unhelpful vacuum which could cause disorder on a considerable scale in some schools where this punishment is still retained."

The SHA's council, at its last meeting, expressed its concern over the proposed cuts, which have already prompted the threat of industrial action from other teachers' unions.

The plan goes before the full council for approval later this month.

'Save deputy' storm grows

Protests are mounting over planned cuts in education spending by Labour-controlled Kirkcaldy Council which include phasing out the post of second deputy headteacher in the authority's five largest secondary schools.

Mr Peter Snape, general secretary of the Secondary Heads Association, said that the move would increase the burden on headteachers and other deputies - and threaten the pastoral work at present being undertaken by the deputies.

The SHA's council, at its last meeting, expressed its concern over the proposed cuts, which have already prompted the threat of industrial action from other teachers' unions.

The plan goes before the full council for approval later this month.

Accommodation will be with host families. The American participants will wish to visit this country for a similar period at the end of the school year or in the following October/November.

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PRIMARY

NEWS



Innuit mothers invariably get the worst childminding service.

1 in 3 childminders refuse to accept black youngsters

by Nick Wood

One in three private childminders refuses to look after black children, according to a new study by staff at the University of London Institute of Education which was published yesterday.

"Children whose mothers came from other countries got the worst service. They had less choice of minders because some minders discriminate against them, and their mothers may accept less good minders because they do not speak English well," Dr Berry Mayall and Dr Pat Petrie say in *Childminding and Day Nurseries: What Kind of Care?*

The study, based on interviews with 159 minders from four London boroughs and concentrating on 66 minders who take children under the age of two, paints a generally bleak picture.

Only one child in four is well looked after in pleasant, well-equipped surroundings with a plentiful supply of toys. The rest, to a greater or lesser degree, are consigned to unsuitable premises run by people with few qualifications in child care.

Many minders are under great strain, the authors say. They combine housework and other jobs with the burden of looking after large numbers of children for long hours and poor pay.

One minder in two is dissatisfied with the fees paid, and one in four admits to having a "poor relationship" with the mothers of the children in her care, the study says.

The authors also investigated conditions in the limited number of day nurseries run by local authorities. Places, allocated to children thought to be in special need, are scarce and waiting lists are long, but standards are much higher than in the private sector.

But mothers often resented the way they were treated by the staff. "They are inferior and deferential: they are the recipients of a preventive welfare service, which implicitly denigrates their competence as mothers and which has been granted to them only after a long waiting period," the study says.

Childminding is a "chancy business" in which the only winners are

likely to be the well-educated and affluent who can shop around successfully. Mothers from poor backgrounds have to take what they can get.

"The Government will not take responsibility for ensuring adequate minimum standards. Using day-care remains a private decision by parents and a private responsibility," the authors say.

Claiming that the law has failed to keep pace with changes in the lifestyles of families with young children, they call for a far-reaching extension of the powers of local authorities. Present arrangements, under which their responsibility is limited to registering private childminders, should be overhauled so that they are statutorily responsible for standards in all forms of day care.

Childminding and Day Nurseries: What Kind of Care? Dr Berry Mayall and Dr Pat Petrie. Studies in Education 13. University of London Institute of Education. Heinemann Educational Books. Price £6.50.

Help required for special needs

by Virginia Makins

Ordinary nursery schools and classes need more support and advice if they are to continue to admit children with special education needs, says an HMI survey.

The survey looked at how these needs were met in nursery schools and units. It found that where nursery schooling was of a high standard, particularly in terms of assessment, planning for individuals, and skilled intervention by staff, the needs of all children - including some with serious special needs - were effectively met. The inspectors judged that one-third of the 52 ordinary nursery schools and units they visited reached this standard, though not all of them had children with special needs.

About half of the nine nursery classes in special schools visited by the inspectors met all the educational needs of under-fives. The special schools were more generously staffed, but the staff was not always well-deployed. Some teachers were more concerned with the comfort and safety of children than with their educational needs.

While almost all the ordinary nursery units were well equipped and arranged, the playrooms in special schools did not always provide well-organized and stimulating surroundings. Teachers in special schools were more likely to use records and assessment as a basis for instruction but were less likely to be effective at meeting needs shared by all under-fives. The need for imaginative play was often ignored, and even children who could do so were often not free to explore, experiment and make choices.

In a few nursery schools and units, teachers involved themselves productively in children's play. But many teachers were not good at this "crucial" aspect of their work. Often extra time was spent with children with special needs, but with no defined purpose or special strategy in mind.

Only one in six of the nurseries had set up efficient assessment and recording systems; others were developing them. Less than one in ten had planning on staff discussion. Assessment and records were most effective when schools based their systems on published schemes. The inspectors suggest that observation, assessment and record-keeping should be given more emphasis in initial teacher training.

Where other professions took part in assessment and the planning of individual programmes, the quality was better.

But sometimes there was little feedback from other professionals dealing with the children, and in some ordinary nurseries, specialist help was "insufficient or non-existent". There were also cases where nursery staff failed to call on specialist help, even when clearly needed.

In many nurseries, contact with parents was too superficial to involve them productively in helping their children along. Most special schools used home-school books to ensure contact; few ordinary nurseries did so.

The inspectors recommended more exchange of ideas between special and ordinary schools. Ordinary teachers could benefit from specialist knowledge about planning individual programmes, and many special school teachers need to know more about good nursery practice.

Young Children with Special Educational Needs. Department of Education and Science.

Scheme delay cost £1m, project sponsors claim

by Charlotte Greig

Voluntary organizations have attacked the Government's delay of a £6m scheme to back their projects for families with children under five. The groups have pointed out the costs caused by the delay of the scheme, as Mr Norman Fowler, Social Services Secretary, announced its go-ahead this week.

The purpose of the scheme is to make the money available to 14 "national voluntary organizations for more than 80 projects, over a period of three years. An additional £1m will go to the National Council for Voluntary Child Care Organizations to fund smaller local groups.

Mr Fowler proposed the scheme in December 1982, and it was due to start in April 1983. The delay has meant the loss of £1m already from the total budget, and projects will receive funds for only 2½ years or less. The release of money is thought to have resulted from pressure by voluntary organizations at the Tory party conference last month.

Gingerbread, the lone parents' organization, and the National Childminding Association are among the voluntary groups to receive large grants. Smaller sums have been allocated to The Save the Children Fund, Banat, the Jewish Family Service, and the Pre-School Playgroups Association.

Priority has been given to childminding schemes, volunteer training for home visiting, family support schemes, and "self-help" day care facilities. Gingerbread plans to set up six day nurseries and a training scheme.

The Department of Health and Social Security claims that this initiative "recognizes the important role that the voluntary sector has to play in provision for under-fives".

"The whole venture is another excellent example of the scope for partnership between government and the voluntary sector in meeting social needs," Mr Fowler said.

How girls learn to lose

by Hilary Wilce

Primary schools offer girls a course of work being undervalued. The report, called *Beyond the Wendy House* by Judith Whyte, is the result of a joint venture on curriculum development between the Schools Council and the Equal Opportunities Council.

The report says that girls, who tend to seek to please and fit in only too well with the atmosphere of primary school which "can sometimes be stifling in its conventionalism".

"These limitations may reflect the more limited qualifications and the more circumscribed outlook of staff who have been recruited to teach in primary schools. Just as the woman who works at home receives less status and respect than the engaged person, those responsible for the education of young children have too low a status; here is another example of women's

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Beyond the Wendy House: sex role stereotyping in primary schools by Judith Whyte. Published by the Schools Council.

Richard Garner reports from the National Union of Teachers' primary and middle school conferences

Adopt ways to conserve, schools told

Schools were urged to adopt their own conservation policies by Mr John Baines, director of the Council for Environmental Education (CEE).

"If you are telling everybody to use public transport and all the teachers drive to school, it's a case of not practising what you preach," he said. Mr Baines felt that schools which had adopted an energy saving policy should have their capitation allowance increased accordingly.

He criticized the lack of emphasis on controlling children outside of the classroom in teacher training documents, adding: "If this doesn't come in the training, then one is reluctant to take them out of the classroom and explore the environment."

Mr Baines said that the Government had told the CEE that it had yet to be convinced of the importance of environmental education.

He was not surprised at this attitude, since Mrs Margaret Thatcher, the Prime Minister, had said during the Falkland Islands crisis: "When you have spent half your political life dealing with budget issues like the environment, it's really exciting to have a crisis on your hands."

New curriculum development role urged on union

Leaders of the National Union of Teachers are being urged to take over curriculum development work until now carried out by the Schools Council.

The union's executive is being asked to carry out a feasibility study into whether it could take on part of the work of the council - now it is being disbanded by the Government.

The union is also considering approaching local education authorities, the National Foundation for Educational Research and some of the subject teachers' associations to see if they could help provide a replacement for the council.

The call for a feasibility study came from delegates to last week's NUT conference on middle schools at Stoke Rochford Hall.

Mr John Mann, former Director of the Schools Council, had earlier said no new research work was being taken on by the council, which may be wound up within the next three months.

Mr Roger Ellis, chairman of the NUT's middle schools advisory committee, described the new move as a "radical suggestion", adding that the union had a long history of close involvement with curriculum development work.

But Mr Cliff Morris, NUT executive member for West Yorkshire, said it would be "totally out of the scope of the union" to take over all the Schools Council's work.

He added there would have to be an "enormous input" by other bodies such as sympathetic local authorities.

The union already has advisory committees covering each section of the education service - primary, middle and secondary schools, teacher training, special education and com-



Picture: The Teacher community homes - and it is felt they could play the major role in this new initiative.

Meanwhile, delegates to the conference called on the union to organize a national conference and regional discussions on the Schools Council's new publication *Primary Practice*, which sets out current practice in schools and highlights the need for curriculum development work.

● In a statement issued this week, the NUT said it was "deeply disturbed" by the Government's "increasing desire to centralize control of the school curriculum". It said it was boycotting the new School Curriculum Development Committee because it would not be an independent body since all its members were being appointed by the Secretary of State for Education and Science. (See also page 6).

Differing on assessment

The chance of an early agreement on the restructuring of teachers' salaries is "somewhat remote", Mr Roger Ellis, chairman of the NUT's middle schools advisory committee, said.

Local authority leaders wanted to introduce assessment to reward "good" classroom teachers, whereas the NUT would like to see teachers having an annual career appraisal or self-evaluation - not necessarily linked to cash rewards, he said.

Mr Ellis said: "There could be a meeting of minds, but just at the moment that's not on the horizon. It's somewhat remote from where we see it."

Delegates feared that the management's proposed assessment would reward male rather than female teachers, since the assessments would be carried out mainly by men.

The conference also passed a motion backing the union's executive in opposing sections of the government's *White Paper Teaching Quality* and calling on the union to mount a massive publicity campaign to tell teachers about its proposals.

"The teachers' biggest concern is over redeployment proposals involving the transfer of teachers from school to school."

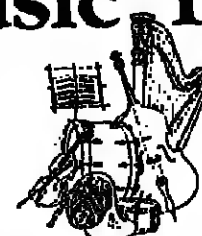
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5. How do you find the largest collection of damaged musical instruments in the world?
6. What is the best way of spending a day amongst musicians and music?
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Call for staff stress probe

Teachers are under great strain because of the increasing number of mixed ability classes they have to teach, the conference agreed.

Mr Elinor Davies from West Glamorgan proposed a successful motion calling on the union to mount an investigation into the strain they face. He said: "We are really suffering because the schools are having to do the best of a bad job."

"To have mixed ability within an age group is a handicap itself, but to have two age groups in a mixed ability group means you are now creating in urban schools the same difficulties that you get in some of the rural areas."

"We should be finding out how the teachers are affected first and then find out how the children are being affected because the teachers are under strain."

THE BRITISH COUNCIL

The British Council offers a limited number of Travel Awards up to a maximum value of £1,000 each plus return air fares to mark its 50th Anniversary in 1984. Recipients of the Awards will travel overseas in 1984 to undertake projects of their own choice to promote cultural relations between Britain and another country for a period of between three weeks and three months.

Applicants, who must be between the ages of 25 and 60 on 1 January 1984 and permanently established in Britain,

should write enclosing a stamped addressed envelope (minimum size 8 1/2 x 4 1/2) for an application form and rules to:

Specialist Tours Department, 50th Anniversary Travel Awards, The British Council, 10 Spring Gardens, London SW1A 2BN.

The closing date for receipt of completed applications at that address is 2 December 1983.

The Awards are supported by British Airways and British Caledonian Airways.

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DES offered lead role with adult unemployed

A new concordat on adult education and training is being discussed by the Department of Education and Science and the Manpower Services Commission. It would give the Commission the main responsibility for securing effective training for the nation's workforce, leaving the education service to cater for most of the unemployed.

Hitherto it has been the Commission which has run the main programmes for the unemployed - such as the TOPS programme of adult training - while the bulk of off-the-job training has been provided by colleges under traditional arrangements with employers. Now the Commission sees its main priority as meeting the needs of industry, and wants to change the whole direction and purpose of the TOPS scheme.

The Commission's officials are proposing that the total resources available for educating and training adults - in colleges, industry, and in the MSC's own establishments - should be deployed under two separate programmes.

● A job-related MSC programme, mainly for those already in work, but including some of the unemployed, closely tailored to local labour market needs and national skills shortages, with MSC grants to employers for training and retraining workers; and

● A programme to be run by the education service under the leadership of the DES to meet the individual needs of unemployed people who are not being trained for specific jobs. It would include a YTS-type scheme of basic training plus work experience for long-term unemployed adults and a shorter scheme of work preparation and foundation training for those who are newly unemployed.

The proposals are set out in a paper

which reflects the response of the education service, industry, and a wide range of other interests to the Commission's call for an overall training strategy made in a discussion paper issued early this year.

The education interests and the unions had reacted strongly against the MSC officials' suggestions that adult education and training resources should be concentrated almost entirely on meeting the needs of the economy, and that the Commission itself should be given the leading role in redirecting them.

At last week's Commission meeting critics were mollified by the sharp change in emphasis in the new paper, which asserts that the MSC can only seek to stimulate and help development of a comprehensive system, and recognizes the need for serious large-scale provision for the unemployed. But they had strong reservations about some of the detailed proposals, and refused to endorse it in its present form.

A major worry for the unions and some of the education groups is the paper's assumption that there will be no significant new money for adult training.

The officials believe their main priority must be to change attitudes among the existing training providers - employers, colleges, and training

agencies - and to spend some of the Commission's existing funds on pump-priming projects and incentive grants.

Other direct MSC action they propose includes the funding of both existing schemes of collaboration between employers, colleges and other bodies and the promotion of new pilot schemes to be run by, among others, education authorities.

But they say that the MSC's main role would be as a catalyst, and that it cannot itself undertake the major reform in the existing training arrangements which are needed.

The officials single out as prime

Edited by Mark Jackson

importance the task of removing the obstacles and disincentives which confront education authorities and training and educational institutions in meeting people's needs. These include the way funds are allocated to colleges, the grading of courses and its effect on provision. They focus on the need to end a way of ensuring that funding decisions by those responsible make sense and fit in with an overall framework of responsibility for meeting the cost of training.

The officials say that it is a matter for Ministers and that the commissioners may want to put it squarely to them.

They call also for a clear framework of bodies to run a coherent system of qualifications, assessment and validation with well defined roles and an agreement on patterns of progression through school, YTS, further and higher education and training and at work. The system while operating within a national framework should be "locally delivered", they say.

The main direct MSC activity proposed by the officials is the job-related training programme which they want to replace TOPS which in many cases helps neither the employers nor the unemployed it trains because so few of them get jobs.

They propose that the money should be spent on grants to employers to train their staff in key skills that are needed in the locality; to train some of the unemployed for jobs that are known to exist locally; to pay employers to train people in skills which are identified as a national priority; and to train people for self employment.

One highly controversial proposal is that there should be a national loan scheme for those who want to improve their skills or retrain for a new career but cannot find anyone to sponsor their training. "They may be willing to pay for their training but cannot convince a bank to lend," say the officials who insist that making use of their willingness to pay for training is essen-

tial if the scale of retraining required in the 1980s is to be secured.

The paper proposes that there should be a pilot scheme in 1984-85 in which the MSC would lend people the money to pay their training fees or guarantee bank loans, possibly subsidising them in part. The pilot would involve advancing or guaranteeing up to £15m, and the sum might be increased to £100m the following year.

The TUC, one of the two major partners on the Commission, is unlikely to entertain the proposal. And the Association of Metropolitan Authorities is likely to join them in opposing it, if only for its possible implications for the funding of students in higher education.

The paper suggests that it would be appropriate for the DES to take the lead in the sister programme for the unemployed, which would be closely related to their individual needs, and states that the DES is already considering how it could help its jobs.

The department has not yet decided whether it will be practical for it to launch a new programme which would have to be run through the local authorities, since its total staff outside London is fewer than 100. Under consideration are proposals that it should, with the help of the Further Education Unit, and the HMI, promote the development of college courses, and syllabuses for the adult unemployed, produce some materials, and disseminate ideas.

If ministers decide that the department should take up the DES suggestion, an announcement is likely to be made as part of a package of proposals for adult education before the end of the year.

New updating link-up

by Bert Lodge

The first combined operation by a city's educational institutions to meet industry's growing need for staff retraining was launched in Coventry last week by the Education Secretary.

The venture, PICKUP (Professional, Industrial and Commercial Updating), was likely to be a "feeling example" which other areas would copy, Sir Keith Joseph predicted.

Warwick University, Leicestershire Polytechnic, Coventry Technical College, and the further education colleges of Henley and Tile Hill have formed the consortium with the help of an annual grant of £200,000 from the city council and a development grant of £82,000 from the Department of Education and Science.

Sir Keith stressed that PICKUP was an employer-led form of education. He assumed everybody taking part was motivated by self-interest and that everyone would benefit.

Welcoming the initiative, Mr Jack Butterworth, vice-chancellor, said that in working together on common courses, the five institutions were breaking the "Procrustean barrier of the binary line."



Girl school-leavers lack skills and knowledge to take up non-traditional training

The North West Region of the MSC to develop a pilot project which would reserve for girls a specific number of places on selected schemes. If these places were not taken up within a specified time, they would be offered to boys as well.

Positive discrimination is allowed under the Sex Discrimination Act of 1975 to train people for non-traditional jobs, but the MSC has sought legal advice because of a question over who will be doing the training. Under the YTS, it is not the MSC directly, but sponsors of schemes.

The EOC's discussion paper points

out that the commitment of the MSC's officials would be crucial in order to persuade sponsors to participate in a positive discrimination project. It also says that career officers would need to encourage girls to take up the opportunities provided.

But at the annual conference of the Institute of Careers Officers, held in Eastbourne this month, Mrs Jane Finlay, deputy chairman of the EOC, said MSC link managers had told the EOC that career officers would be unlikely to encourage girls into non-traditional areas.

"From their experience they felt that career officers would be unlikely to take positive steps to encourage girls to consider training in non-traditional skills," she said.

Office staff less numerate

Standards of spelling, arithmetic and typing among Britain's office workers have slumped in the last 10 years, according to office managers.

They place the blame for the decline partly on the education system and partly on now aids such as calculators, on which office staff increasingly depend.

The findings are published in a report from the Alfred Marks Bureau, 281 office managers were questioned about the quality of staff over the past 10 years. While they thought general standards had increased because of greater choice of recruits during the recession, levels of numeracy and literacy had fallen sharply.

Only 15 per cent thought standards of numeracy had improved since 1973, while 56 per cent thought they had declined. Only 11 per cent thought standards of literacy had improved, while 63 per cent reported a drop.

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EOC asks for 'girls only' places on work projects

by Hilary Wilce

Girls-only places could be introduced into the Youth Training Scheme if the Manpower Services Commission gets the legal go-ahead. Pressure for such places has come

from the Equal Opportunities Commission, which wants to see the same encouragement for girls to take up non-traditional jobs.

In an unpublished paper on how positive discrimination - could be brought into the YTS, the EOC describes engineering, plumbing, information technology, vehicle maintenance and joinery as the kind of areas in which special places could be reserved.

The paper sets forth the argument that the object of positive discrimination in training is to compensate for earlier discrimination or lack of encouragement. Girl school-leavers suffer from this, it says, because they often lack the basic skills and knowledge needed to take up non-traditional training, and are given narrow careers advice.

The EOC has been cooperating with

Careers Diary

by Brian Heap

It could be argued that since competition for jobs is ever greater than for degree courses in veterinary science, medicine or law, the teenager who manages to get a job has achieved far more than a successful university applicant.

Similarly, it can be said that since far more school-leavers are trying for jobs than applying for university places, schools really ought to give far greater priority to job hunters than they do. Unfortunately, the secondary education the name of the game is academic achievement, although outside school-

life and technological areas, academic prowess does not really count for very much in the world of employment.

At the outset of application to write a good letter of application is the most important accomplishment of a student. The flurry of UCAS and other forms therefore, the post - half term period should be devoted to full-time employment applications, whether for fifth or seventh-year leavers. Larger firms are now considering recruitment for next summer.

University sheets are much in evidence at present, providing interesting information on new courses, research and school liaison events. Liverpool University Department of Electrical Engineering is offering four £500 awards to this year's applicants; and for intending applicants to Cardiff (UWIST) - placing UWIST first on the UCAS form - awards worth £100 per term for three years are available in a number of subjects (details from the admissions tutor at UWIST).

Finally, this year's Faraday lectures will explain how satellites are built. They will be given in Manchester, Cambridge, Stoke, and Leicester during the coming month. Full details from the Institution of Electrical Engineers, Station House, Nightingale Road, Hitchin, Hertfordshire.

NOTICEBOARD

PEOPLE...

UNIVERSITY APPOINTMENTS
Mr Alex Barrett has been installed as the new head of the Institute of Health Education at the University of Northampton. Further details from Mrs Pat Clarke at the above address.

FORTHCOMING
November 15
Brunel University Education Department one-day conference on "Maths, Design and Technology": the links between maths and CDT in the light of current curriculum initiatives, at Shoreditch Campus, Brunel University. Principal speakers: Sir Wilfred Cockcroft and Henry Knolly. Further details from Mr G. Gregory, Education Department, Brunel University, Coopers Hill, Uxbridge, Middlesex.

November 16
Politics Association sixth form conference on "Politics Now" to be held at Central Hall, Westminster from 9.30am to 4.30pm. Speakers: Mrs Shirley Williams, Sir Cecil Clothier, Mr Cyril Smith, Mr Norman St John-Stevens and Mr Denis Healey. Details from the Politics Association, 16 Gower Street, London WC1E 6GP.

November 18
Association of Vice Principals of Colleges autumn meeting, "Towards an Adult Training Strategy", at the Royal Society of Arts from 10.30am. Speakers: Geoffrey Holland, Arthur Stoker and Peter Cline. Further details and application forms from F. Rosemond, Windsor and Maidenhead College, Boyne Hill Avenue, Maidenhead SL6 4EZ.

November 25-27
Standing Committee for the Education and Training of Teachers conference on "Pre-Service Teacher Training" at the Post House Hotel, Leicester. Fee £70. Further details from Mr J. Taylor, SCETT, Hamilton House, Melbourn Place, London WC1H 9BH.

COLLEGE APPOINTMENT
Professor R. K. M. Williams of the University of Education at the Open University of Higher Education.

AWARDS
The Council for National Academic Awards is to confer the following honorary degrees: Doctor of Education: Mr G. J. Ounings and Dr Rosemond, Windsor and Maidenhead College, Boyne Hill Avenue, Maidenhead SL6 4EZ.

Doctor of Technology: Mr John Parker.

CONFERENCES...

NEXT WEEK
November 11
"Keynes and his Contemporaries" - a seminar marking the centenary of the birth of John Maynard Keynes to be held in the Cornwell Lecture Theatre, the University of Kent at Canterbury from 2 pm to 6.30 pm. Speakers will include Dr G. H. S. Jones, Lord Kahn, Sir Austin Robinson, Professor J. Kregel and Dr A. V. K. Dames. Admission free. Inquiries to Professor A. P. Thirlwall, professor of applied economics, Keynes College, the University, Canterbury, Kent. Tel: Canterbury 66822 ext 7414.

EVENTS...

November 5
The Royal Opera House will be selling old programmes, posters, yearbooks and surplus archive material to raise funds for the Archive Department from 10am to 4pm at 45 Floral Street, London WC2. New

November 12
Northamptonshire Health Education Teachers' Association and the Institute of Health Education one-day conference on "Supporting Health Education in Schools" to be held at the School of Education, University Centre, Barrack Road, Northampton. Fee £25.50. Further details from Mrs Pat Clarke at the above address.

November 20-26
Sandwich course in puppetry in the education of ESN adults and children at the Little Angel Marionette Theatre, London N1. For teachers and therapists. Further details from course tutor: Caroline Aslett, Burt 2, Legard Road, London N5 1OE.

November 20-26
The fifth Observer-Whitbread national essay awards have been launched for pupils between the ages of 15 and 19. For details of the industry-related subjects, rules and registration forms please write to the National Essay Awards, 27 Abernethy Street, London W1X 4QB. Closing date January 30, 1984.

RECENT PUBLICATIONS

The National Association for Primary Education is publishing *Christian Schiller in His Own Words* - a collection of talks on Primary Education by the late Christian Schiller. Available from Christopher Jarman, NAFE, Journal, Whitland, Carmarthen, West Hill, Putney, London SW15 3SN. Price including postage and packing £3.50.

Museums and Galleries in Great Britain and Ireland 1984 Edition. A comprehensive guide to more than 1,000 art galleries, collections and museums. Entries are listed alphabetically under towns and give information on opening times, admissions, exact location and a brief description of principal exhibits. Subject, geographical and alphabetical indexes are also included. Price £1.75.

GO 84 The 1984 edition of Graduate Opportunities is now available. Distribution is free to all final-year undergraduates at their places of study, but individual copies are obtainable from The New Opportunity Press Ltd, 76 St James' Lane, London N10 3RD, price £1.50 plus £1.50 p and p.

COMPETITIONS...

The Observer-Whitbread national essay awards have been launched for pupils between the ages of 15 and 19. For details of the industry-related subjects, rules and registration forms please write to the National Essay Awards, 27 Abernethy Street, London W1X 4QB. Closing date January 30, 1984.

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Sabbaticals-for-all plan via covenants

by Philip Venning

All teachers would have the choice of secondment to a full-time sabbatical course, with a resulting increase of about 5 per cent in the teaching force, under a scheme proposed by Mr Patrick Souper, of Southampton University's department of education.

Writing in the latest issue of *Educational Management and Administration*, Mr Souper suggests that any teacher wanting secondment should request that 10 per cent of his or her salary should be withheld for three years. This sum would be "loaned", so that the income tax paid could be recovered and invested.

After three years the teacher would be eligible for secondment on request. If he or she were unsuccessful in finding a place, or had second thoughts, the sum would be returned minus tax, or held over.

Such a scheme would provide intending students with freedom to choose courses most suited to them, and provide local authorities with a qualified teaching force at greatly reduced cost. There would have to be some limit on how often a teacher could take advantage of the scheme - a maximum of one year in seven would be appropriate.

This could form part of a much wider restructuring of the salary system, also suggested by Mr Souper. Under this all teachers, including heads, would be required to attend a term's full-course every seven years.

Educational Management & Administration Oct 1983 BEMAS, Longman Group Ltd, Fourth Avenue, Harlow, Essex CM19 5AA £15 annually.

The statistics show that since 1980 earnings of workers in the "education and health" category have risen by 69 per cent, well above the 51 per cent for the economy as a whole. The only comparable rises were for workers in

"other services", and in the electricity, gas and water supply industries. The period includes the Clegg awards.

Employment Statistics Oct 1983 HMSO £2.35.

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On the wrong footage?

Sir - Accompanying an article on video nasties in the special section on videocassettes (TES, October 21) there was a photo of a scene from the film *The House That Dripped Blood* among pictures from other videocassettes, captioned "some of the films in question".

In an article "Home truths" in the same issue, a report is previewed quoting a 10-year-old saying that what he found frightening in the film was "when the floor board came up in a bedroom and somebody got their insides pulled out and blood was all over the place".

As the producer of *The House That Dripped Blood* and a filmmaker who prides himself on having made 40 feature films, none of which ever contained sex, nudity, violence, gore or anything which in any way might dehumanize, brutalize or degrade people, I am sure you find no such scene or anything like it was contained in the picture. The film was a classic horror film, written by Robert Bloch and based on four of his short stories, and a distinguished cast, and received excellent reviews from the critics.

The quoted 10-year-old must have confused *The House That Dripped Blood* with another film entirely and David Hartshorn, the teacher who did

the research, must have accepted his reported statement as referring to my film on the basis of the film's title, not its contents. The film itself does not contain a single drop of blood.

The strangest thing about using *The House That Dripped Blood* as an example of "films in question" is that the picture was intended for a young audience and the British Board of Film Censors gave it the intended A certificate. When told by the circuit bookers that they would not play a horror film unless it had an X certificate, the distributors insisted that I go back to the censors and ask them to reclassify it X. To now see the picture listed as a "video nasty" by someone who undoubtedly must not have seen it is indeed ironic.

MILTON SUBOTSKY
20 Stradella Road
London SE24

David Hartshorn writes:

The research method I adopted, as stated in my report, used a questionnaire technique and after each comment the children were invited to name the film which provoked such a response. While there is evidence which suggests that children of this age do not maintain great accuracy in recording

responses, they are also known to be extremely sincere in what they report. *The House That Dripped Blood* was mentioned on three separate occasions in the context of films which contained something which worried these young children. I am, however, willing to accept that this particular film may have been confused with another by this child, and while I personally viewed a cross section of these films it simply was not practicable to view 261.

As to the claim that the film was originally given an A certificate, my sample's ages ranged from 9 to 13 years. In fact according to Milton Subotsky's letter, he would seem to want it both ways. He complains that we have given the film sensational publicity and then goes on to say that he went back to the censors to ask for it to be reclassified X (presumably the A certificate did not give it a sufficiently horrific picture).

On the question of it being listed as a "video nasty", neither in the age nor in my report does this film appear in such a category. I would also like to point out that my research was limited to determining what young children are watching while admitting, as I did in my report, the obvious limitations that a questionnaire approach imposes on a research design.



Polanski's Macbeth... violent detail

The real nasty in the nasties

Sir - The cautionary tale of maladjusted Mark ("Video Special, TES, October 21) proves that this is no time for complacency about the extent of the damage that can be done to a child's personality and behaviour by a diet of "video nasties".

However, there are two small points that some of the makers of these have so far ignored. First, explicit details of horror eventually become ridiculous; any teacher seeking for a suitable performance of *Macbeth*, perennially dear to the hearts of O level examiners, would do well to avoid Roman Polan-

ski's travesty of a film, where the accumulation of violent detail is so utterly ludicrous in effect.

Second, as story-tellers have always known, it is the concealed horror which the details are left to the imagination that is really disturbing to children. Have told me that the milk "Jaws" frightened them far more than the "tomato sauce and plastic teeth".

ELAINE LEVER
Bridge Farm
Lillingstone Lovell
Buckinghamshire

No inspection

Sir - Let there be any misunderstanding, may I be allowed to make one correction to Bert Lodge's otherwise completely accurate account of his interview with me (TES, October 21). The National Development Centre for School Management Training will not of course "inspect" the work of the various training institutions mentioned in DES circular 3/83.

The NDC has five functions: to establish a resource bank of information about good practice in management training; to evaluate with the full cooperation of those concerned existing and new training programmes in school management; to develop training materials in certain priority areas; to disseminate these findings and materials; and to support the implementation of school management training.

As Bert Lodge quite rightly emphasized, in carrying out all of these functions we will be working collaboratively with the various local authorities and regional centres in order to strengthen school management training throughout England and Wales.

RAY BOLAM
Director
National Development Centre for School Management Training (School of Education University of Bristol)

Collaboration

Sir - Bert Lodge, in his article on the National Development Centre for head teachers, misunderstands the relationship between the Bristol centre and regional centres.

The NDC is designed to stimulate the development of management training and to provide resource material. It will be interested in identifying effective practice but there has been no agreement that Dr Bolam and his team should "closely inspect" other institutions. The staff involved in the development of management training at the Institute of Education will welcome collaboration with the Bristol centre; their only problem arises from time. Like other centres, our initial course planning has taken place before the Bristol centre has been in a position to offer any resources.

We look forward to discussing with Dr Bolam the way in which his work may most appropriately develop in response to our needs.

JOHN WELTON
PAMELA YOUNG
Department of educational administration
University of London
Institute of Education

Temporary change

Sir - I wonder how many new entrants to teaching have been affected as I have, by the increase in temporary posts in conjunction with a change in DES regulations.

Since leaving training college in the summer of 1982 I have been able to obtain only temporary posts. On taking up these appointments I have been assured that if the period of appointment was greater than one term this would count toward completion of my probation. If this was still the case, my next temporary post, which I take up after half term, would complete my probationary year.

I have been informed, however, on being offered this new post that due to new DES regulations my previous probationary service, since it was not continuous with the same authority, is invalid.

It appears to me problematic whether I will ever be able to obtain an unbroken, consecutive period of service with the same authority, and therefore I may never complete probation.

R MADDOCK
11 Pountney Road
Bury St Edmunds
Suffolk

Exam reproach

Sir - According to your report (TES, October 21) the National Council for Educational Standards claims that other studies of examination attainment in comprehensive and selective schools, such as a study by the National Children's Bureau, have "acknowledged faults". This is not only irrelevant as a defence of their own work, but incorrect. I know of no reviews of either our own recently published report or of the other major study in this area - that of John Gray and his colleagues in Scotland - which would substantiate this claim.

The NCES may well be referring to the critique produced by Cox and his colleagues of our 1981 report, which did compare comprehensive and selective schools, but not in terms of examination results. This critique has received little, if any, independent support.

Their main objection at that time appeared to be to our use of standardised statistical techniques to allow for differences in the social class and ability of intakes. As they have now used the same methods in their own work, they would presumably wish to withdraw their intemperate comments.

KEN FOGELMAN
Assistant director (research)
National Children's Bureau
8 Wakeley Street
London EC1

Special needs

Sir - The letters you publish from Mark Ford and Joyce Dale (TES, October 14) defending Open University course E241 reveal a misreading of the intent of my letter concerning the earlier article by Patricia Potts attacking Dr Keith Joseph's thinking on special education. It may be that E241 is the eclectic course its defenders suggest, although some of the books associated with it are long on sociological theory and short on actual evidence from the field.

It is this weakness in the integrationist approach which Ms Potts reveals in her propagandist, populist writing. If I appeared in *Interference* in my letter (TES, October 14) it is because I am intensely disturbed by the slanted presentation picture painted in the press and other media.

It may well be that the proponents of integration have been more clever, more diligent in producing an attractive copy for inclusion in the media than the proponents of the special schools sector. Certainly the "new" makes better copy than the humdrum, however successful the latter is!

The parents of special needs children and the intelligent disabled who resent their education in a segregated setting have my sympathy and support in their fight to change the system as in fact does Patricia Potts in hers. On the other hand, and I put up my Aunt Sally against despite Mark Ford's strictures, the special schools sector has its moral intact. Articles such as Ms Potts' write unfortunately encourage the "skindiff" authorities" Mr Frank Dobson MP attacked in a speech you reported in the same issue you published the two letters in defence of E241.

The "good" press the integrationist

lobby gets not only encourages the skindiffs but also doctrine politicians with egalitarian dogma built into their thinking on "integration", which often goes with intense interest in Third World and racial equality issues, which while admirable in themselves, often forget the reality in front of our eyes. The evidence of the good wing special schools can do is blotted out by the good integrationist press. The evidence of the failures of integration in Scandinavia (yes, I've seen it a action there) and in the US is seldom or never presented for action.

One last and practical point, E241 and all the advanced courses in special education nationally can only train about one teacher in every 3,000 annually - in total, just about enough to provide a fully qualified staff for the special schools in the West Yorkshire region. At that rate it will be the twenty-first century before all teachers in the special schools sector are trained, and into the twenty-second before those teaching the 18 per cent already integrated into the ordinary school sector are trained.

Many of the types of children now in special schools and units still need protection from the slings and arrows of unsympathetic ordinary schools, unmotivated teachers, exam-based curricula (often strongly supported by the parents of the non-special needs children) and financial cut-backs in the name of integration. Many more will still need protection for the short and medium-term future. To help such children a more balanced picture needs to be produced.

PHIL SIMPSON
(Formerly adviser in special education, Leeds)
Lincroft House
Landseer Drive
Leeds

Maths answers

Sir - Yet one more pointer - the comparison in achievement in maths in Britain and Germany (TES, October 21).

For several years I have, apparently ineffectively attempted to point out the appalling deficiencies in our schools related to the less academic. It is not more maths with more skilled staff that is needed. The Dutch reach high achievement in their vocational schools with three periods of maths a week.

It is environment related to the needs and abilities of these children that is essential. Most of the teachers of practical subjects in the Dutch vocational schools have 10 years' experience in their own industries; 40 per cent of the youngsters go to them.

Janet Jones of Reading University, with an extended scrutiny confirms the impression made to me by a one-day visit to a horticultural school. She visited the mechanical engineering school and the associated engineering. Particularly impressive was their academic achievement with pupils

whose scores here are regarded as non-examinable. Teachers' status and salary in the horticultural school, most staff had been in the industry for 10 years and many European countries owe a debt of gratitude to the horticultural industry for its contribution to the country's economy. Salaries are higher - and achievement is higher - and by repeating of years in care of failure in annual assessment.

D HINDSON
Poplar Cottage
Bradfield Common
Bury St Edmunds
Suffolk

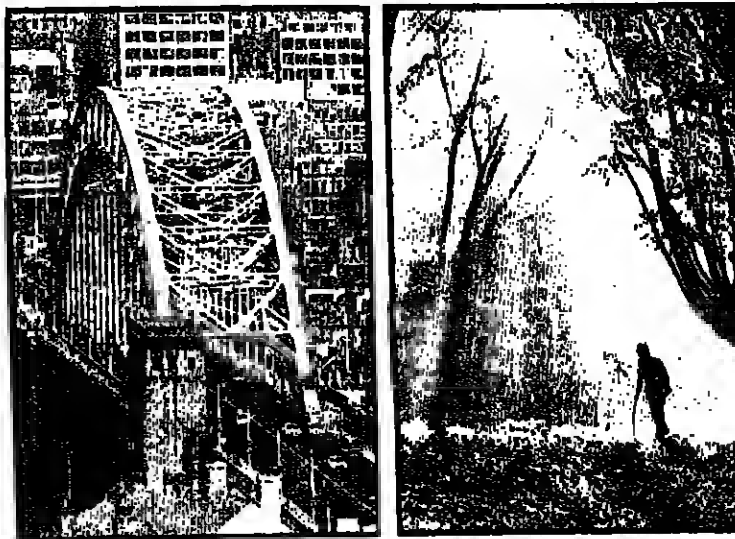
Blurred view of environment

Sir - I am of the opinion that innovation in education is generally a slow process. However, in recent years there have been developments that have rocked the educational "boat" and which the captain and crew of the DES, I refer to projects such as peace studies, world studies and other global perspectives that are encouraging pupils to think and perhaps develop a sense of objectivity to many of the world's issues.

However, I was disheartened to read (TES, October 14) an article that reported Sir Keith Joseph as saying he was more concerned with preparing and equipping new teachers for a life in schools as conveyors of compartmentalized knowledge and experience. Environmental studies in his eyes is not seen as valid enough for students to involve themselves on a par with other academic subjects. I recognize the need for specialist biologists, chemists, geologists and geographers, but sociologists and geographers, but sociologists and geographers who can coordinate and interpret data from a variety of interrelated fields of knowledge. This ensures a balance and an overview of the issues and problems of the exploited world we live in.

Those who are sensitive and informed about the needs and requirements of learning, recognize the important role of environmental studies in school curriculum. Undoubtedly the interdisciplinary approach to education benefits pupils' learning and understanding. Sean Webb Carson in his book, *Environmental Education: Principles and Practice* emphasizes that there is no field of knowledge that is not being turned inside out by the environmental revolution. In 1970 a conference on environmental education in Nevada gave the following definition:

"Environmental education is the process of recognizing values and clarifying concepts in order to develop skills and attitudes necessary to understand and appreciate the inter-relationships among man, his culture and his



Environmental education: issues of quality... man-made and natural

biophysical surroundings. Environmental education also entails practice in decision making and reformulating a code of behaviour about issues concerning environmental quality."

In secondary schools the picture can only become less clear because of the imposed organizational constraints put on our pupils by politicians.

E F ROWLAND
Head of Humanities
Rochdale Middle School
Rochdale
Lancashire

In-service outside

Sir - The report on Sir Keith Joseph's attitude to environmental education in training is incomplete. I am accurately reported as bringing a letter I had received from the Secretary of State to the attention of delegates at the annual meeting of the National Association for Environmental Education. Unfortunately your reporter omitted to record the encouraging part of the reply to my plea for environmental matters to be included in initial and in-service

teacher training. Sir Keith went on to say, and the NAEE agrees: "We also support in-service training courses which place environmental education in the context of the whole curriculum and encourage awareness of the potential teaching material to be found in our natural surroundings."

I could have wished that he had made reference to "man-made" as well as natural surroundings and that he had not limited himself to mentioning "in-service" training only in this context.

Incidentally, too, the report singled out only one of the 26 pressures which are placed on headteachers to alter the school curriculum. Personal or institutional prestige was not one I emphasized particularly for attention.

PHILIP NEAL
General Secretary
National Association for Environmental Education
Sutton Coldfield
West Midlands

OVERSEAS

UNITED STATES

Peter David on progress towards school reform

The United States educational establishment has at last broken its silence and responded to the recent wave of national reports and inquiries calling for reform. Eleven of the most influential educational organizations last week buried their differences and issued a detailed statement setting out a collective position on the problems of the schools and containing its own recommendations for action.

Agreeing on a common position was a difficult task for the traditionally divided organizations. Signatories include the two rival teaching unions as well as the national associations representing principals, school boards, parents and state governments.

Dr Harold Hodgkinson, who chaired the meetings leading to the statement, said the organizations involved hoped their agreement would encourage local teachers and administrators to work together to improve standards.

While welcoming the renewed interest in educational reform stimulated by the recent reports, Dr Hodgkinson gave a warning against the belief that the complex problems of the schools could be solved by a single "quick fix". He also said that the quest for excellence - which had become the slogan of many of the new reports - should not be allowed to eclipse traditional concerns for equality.

"We see no conflict between the goals of opportunity and excellence, and urge a continuation of the agenda of the 1950s and 1960s to make educational opportunities available for all children. Excellence in our view does not mean the *de facto* exclusion of poor or disadvantaged children from good or disadvantaged families," the group's report says.

The detailed recommendations contain few sharp disagreements with those published earlier by the National Commission on Excellence and the Carnegie Foundation for the Advancement of Teaching.

Room for equality on road to quality



Better conditions recommended

As a priority, however, the group favours raising the basic pay of all teachers, and gives only a lukewarm reception to the fashionable call for "merit pay" increases, which would confine raises to the best teachers.

Other recommendations made by the group include: better conditions in the classroom. Teachers, no matter how well compensated, cannot teach in a disrupted or overcrowded school, or in a school with health or safety problems, or in a school with insufficient supplies, but a school with broken equipment, less community attitudes about discipline and low community expectations about pupil academic productivity.

Unsatisfactory teachers should not be allowed to stay in the profession, but their removal should come "only after a process which is carefully defined in writing and protects the right of children, teachers and em-

Room for equality on road to quality

ployers in accordance with the law". The curriculum should focus on the academic basics, but the group says the call in the recent Excellence Commission report for "five new basics" is confusing. The schools already offer four basics - English, history, mathematics and science. The only new basic is computer literacy, and its meaning is unclear. As requirements for high school graduation, the group urges local boards and states to insist on four years of English, and two years each of mathematics, science, history or social studies.

Before considering an increase in the length of the school year, on recommended by the Excellence Commission, school boards should try to make better use of the five or six hours a day children already spend in school. The group claims that in many schools children spend as little as 50 per cent of their time in actual learning activities.

Tests alone should not determine the fate of pupils. Test scores should always be complemented by assessments based on classroom grades, teacher recommendations and other indicators of performance. Testing should be part of the procedure used to screen new teachers, but "no multiple choice test can guarantee teacher competence". The ultimate test of the quality of new teachers must be actual performance in the classroom evaluated by an experienced teacher and a university don.

Finally, the group gives a warning against assuming that all schools are bad, or that the educational reforms of the last 25 years - such as special education for the handicapped, desegregation and student rights - should be abandoned.

In another development last week, the Carnegie Foundation for the Advancement of Teaching, which recently published one of the most detailed reports on the problems of American schools, announced that it had decided to back its recommendations with its money.

In collaboration with the Atlantic Richfield Foundation, Carnegie is providing \$1.7m (£1.1m) in grants to help implement some of its recommendations.

Verbal promise

Sir - As chairperson of the Association for Verbal Arts I comment briefly on Anne Stevenson's article "Professors and Poets" (TES, October 21). While many of her points are well taken, the article as a whole may give the false impression that our association is proposing to abandon criticism and the interpretation of literature in favour of the practice of writing.

The manifesto of the association, published in *The THES* on the same day, is based on a more detailed report on the future development of literary studies which appeared in *The Arts and Higher Education* (copies available from the SRHE, University of Surrey). The manifesto emphasizes that "English at all levels should involve the study and practice of a wide range of modes, written and oral, literary and non-literary" (my italics).

It goes on to argue that "true creativity in any art can best be developed within the framework of a thorough understanding of the nature and history of that art... Practice in the verbal arts is valuable not only for its own sake but because it helps students appreciate the achievements of writers of the past and take on informed interest in contemporary writing. It provides an intimate and practical insight into how language works, so acting as the ideal bridge between literary and linguistic concerns."

"Modern literary theory, too, is most easily understood by students

who have made their own raids on the inarticulate." The aim of the Association for Verbal Arts is not to reduce the scope of English but to expand it. It is our view that such an expansion is necessary if the discipline is "not only to survive the present difficult period but fulfill its promise as a major area of study and practice in the future". The honours degree in English studies on which I teach practices what the manifesto preaches: practical verbal arts are a compulsory and assessed component along with linguistics, stylistics, literary history and criticism.

It is very popular with students and we are encouraged by the appearance on the course of many who have practised writing as part of their secondary studies through the Joint Matriculation Board Sheffield A level scheme, or whose sensitivity to the medium has been increased through the English language A level papers offered by the JMB and London boards.

I would like to hear from those who have experience of teaching verbal arts, literary or non-literary. Their comments on principles and methods will be acknowledged in my research into existing approaches and provisions here and abroad. Copies of the association's manifesto, signed by more than 40 teachers and writers, are available from me free of charge.

ANNE CLUYSENAAR
Principal lecturer
Department of English
Sheffield City Polytechnic

Baccalaureate fees

Sir - I am writing to correct a factual error in the otherwise well-balanced article on the International Baccalaureate (TES, October 14). Since schools do not pay the annual subscription. This comes from the contributions made by national governments and the private institutions. Our education authority pays - as it does for any other public examination - the subject entry fees.

This should be made clear, because, as it stands any other state school which might be considering embarking

on the IB would drop the idea and we have already been asked how on earth we pay the annual subscription.

JUDITH A O'SHEA
Senior Mistress
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Willow Green
Ingtonstone
Essex

Letters for publication should be kept as brief as possible and typed on one side of the paper only. The Editor reserves the right to cut or amend them.

'Unfair to boys' decision brings cane within striking distance of ban

AUSTRALIA

Luis Garcia looks at the aftermath of a ruling on discrimination

The days of the cane in New South Wales government schools would soon be over, because the Anti-Discrimination Board has ruled that corporal punishment discriminates against boys.

The education department's guidelines on the use of the cane say that while boys may be caned by school principals and senior teachers, girls aged 12 or over may not.

According to Ms Chrmel Niland, the president of the board, this is in direct contravention of the NSW Anti-Discrimination Act, which makes it clear that educational institutions must not discriminate against students on the grounds of sex.

The board's ruling means that boys aged 12 or over who are caned in government schools (the legislation does not cover private institutions) can now take legal action against the education department on the grounds of discrimination.

Under the legislation, parents can demand some form of redress, either an official apology, disciplinary action against the offender, and, in some cases, financial compensation of up to \$40,000 (£23,600).

Already the board has received at least one official complaint from the family of a 12-year-old country boy, which is being backed by a group called Parents and Teachers Against Violence in Education.

The Sydney-based group is a vocal opponent of corporal punishment in schools and its advisory council boasts many well-known Australian educators and public figures. The group keeps an extensive dossier, including photographs and medical certificates, of cases where children have been severely beaten up by teachers.

The group's coordinator, Mr Jordan Riak, believes that using the anti-discrimination legislation to force the state government to take some action on the issue of corporal punishment in schools, could prove very effective.

The abolitionists point to the European Court of Human Rights' decision that the use of physical punishment in schools against parents' wishes was a violation of human rights.

Mr Riak said that the government had been particularly slow in making a firm commitment to the abolition of the cane, and allowed senior bureaucrats to make what in effect were policy decisions in that area.

The Anti-Discrimination Board's ruling gives the government in NSW three options, and all could prove very embarrassing.

They are to amend the anti-discrimination legislation, extend the use of the cane to girls over 12, or to abolish the use of corporal punishment altogether.

The third option could meet some resistance from principals, teachers and many parents. A recent survey by the education department showed that almost 80 per cent of schools wanted to keep the cane under extreme circumstances, while only 4 per cent wanted it abolished.



Worship involves everyone.

Fact of faith

Sir - It certainly is tactless to suggest, as Richard Wilkins does (TES, October 21) that Christianity is "multicultural, multi-racial and multi-faith" to an extent that other faiths at present are not.

If I may take the Hindu community as one example, there is an acceptance of the contribution that anyone present can make and at all levels of the worship everyone is involved. Prashad is offered to all who come and some Hindus and Sikhs think I know remained puzzled that they are not offered communion when they come to church.

The variety of faiths in this country need each other and suggestions that any particular faith is more multicultural than any other is difficult to sustain and it tactless (as suggested in the letter) should be resisted.

RICHARD M BAINBRIDGE
Lady Spencer-Churchill College
Oxford Polytechnic
Wheatley
Oxford

Researcher replies

Sir - I take very strong exception to Christopher Price's insulting remarks (TES, October 28). From his comments it would appear that Mr Price has researched my history and come up with a picture of myself as a fascist-gone-communist. He further implies that I should return to Central Europe to pursue my "misplaced nostalgia".

This totally gratuitous attack, not based on anything that I have either said or done and contrary to everything that I believe and stand for, would appear to be none other than Mr Price's reaction to my Polish name. That he should not decipher my name is a sad comment on his lack of knowledge (the ending -cki denotes male gender) and on his inability to read the biographical note at the beginning of our report, *Standards in English Schools*. I feel exceedingly disappointed to find that there are those who are happy to attribute fascist and communist qualities to the writings of these two philosophers. I should point out that both my parents fled Poland when Fascist Germany invaded in 1939 and they chose not to return when it became clear that the communists had consolidated their power in 1947. Mr Price stands condemned by his own ignorant mockery.

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Exam reproach

Sir - According to your report (TES, October 21) the National Council for Educational Standards claims that other studies of examination attainment in comprehensive and selective schools, such as a study by the National Children's Bureau, have "acknowledged faults". This is not only irrelevant as a defence of their own work, but incorrect. I know of no reviews of either our own recently published report or of the other major study in this area - that of John Gray and his colleagues in Scotland - which would substantiate this claim.

The NCES may well be referring to the critique produced by Cox and his colleagues of our 1981 report, which did compare comprehensive and selective schools, but not in terms of examination results. This critique has received little, if any, independent support.

Their main objection at that time appeared to be to our use of standardised statistical techniques to allow for differences in the social class and ability of intakes. As they have now used the same methods in their own work, they would presumably wish to withdraw their intemperate comments.

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The movement offering something for everyone

DENMARK

Christopher Follett looks back at 140 years of adult education

The folk high school movement is Denmark's most notable contribution to education. The bicentennial of the birth of the movement's founder, Nikolaj Frederik Severin Grundtvig, is being celebrated this year, with record attendances at folk high schools and the widest selection of courses ever on offer.

Currently, more than 50,000 Danes attend the country's 95 *folkehøjskoler* - independent experimental, residential adult (non-examination) mixed colleges catering for the 17½-year-olds upwards and offering short and long courses in a myriad of subjects. Grundtvig year has been marked by a burgeoning of interest in the schools, with 200,000 to ten month courses, and - for the first time ever - more than 500 shorter courses (mainly of one to three weeks) for adults, families and old age pensioners proffered.

Danish folk high schools take many

forms - special ones for old age pensioners, gymnastic and physical training, youth, and general folk high schools - even one for women. Subjects range from theatre, poetry, philosophy, music, art and weaving to history and problems of the Third World.

Common to all folk high schools are the residential and experimental elements (washing-up and kitchen duties are shared, students and teachers often exchange roles, deciding in concert on syllabuses), their private, independent status (the government subsidizes up to 85 per cent of operational costs and students can apply for grants) and lack of examinations and any firmly predetermined curriculum.

The average age of the participants (at 24.8 years) is lower than is usual in adult education in other countries, over-25-year-olds constituting 28 per cent of pupils. Sixteen per cent of all folk high school students come from the ranks of the unemployed, over 50 per cent of all pupils are women and 7 per cent of participants are foreign students, increasingly from North America, Asia and Australia. Folk high schools employ 730 teachers, 70

per cent of them full-time.

The first Danish folk high school was set up in 1844, almost 140 years ago, based on the ideas of Grundtvig (1783-1873), a revivalist clergyman, hymn-writer, historian, politician and educational reformer. Inspired by the "lively interaction" and comradeship inside and outside class that he observed between teachers and students at Cambridge University in the 1830s, Grundtvig advocated in a pamphlet published in 1836 the setting up of a more liberal, less formal, and elitist form of education in Denmark, long before the educational system as such existed.

Grundtvig's original concept of the folk high school "for the common man" envisaged a system of free,



Nikolaj Grundtvig... Inspired by Cambridge

part-time schools open to the working people, largely peasants and farmers in the predominantly agricultural Denmark of the time, afforded them enlightenment and an opportunity to catch up on learning at slack times in their working year.

The idea was that the folk high schools should be divorced from the excessively bookish and pedantic Latin and German influences then prevalent in Danish academe and the forbidding authoritarian nature of normal schooling of the period, following the introduction of compulsory school attendance in Denmark in 1814. Instead Grundtvig saw the folk high school as offering a creative education, meaningful for the working man, characterized by a lively exchange of ideas between pupil and teacher, a dialogue far from dreary concepts of "lecturing" and learning by rote.

At a turbulent time in European history, when Denmark, a small country, saw its very existence and culture continually threatened by outside Great Power interests, Grundtvig also stressed the importance of building a sense of individuality, national and Nordic culture identity. A feeling of "Danishness" and an awareness of the importance of the mother tongue, coupled with a sense of democracy and "the common good" also became important ingredients.

By the late nineteenth century, an impressive 15 per cent of Denmark's peasant youth was attending folk high schools with far-reaching consequences for the Danish society as a whole - spawning free thinking, political reforms such as female suffrage, and agricultural progress, such as the co-operative movement in Danish farming, which paved the way for Denmark to become a leading agricultural nation.

Grundtvigian-type folk high schools exist in a number of countries outside Denmark. There are almost 400 such establishments in Scandinavia as a whole, as well as folk residential schools in the Netherlands, Poland, West Germany, Switzerland, Britain, North America and Tanzania.

How to sit exams while under arrest

ISRAEL

Mary Russell describes the interruptions that Palestinian students face

This autumn saw the last of the West Bank's student population of 8,400 returning to their studies when the University of Birzeit reopened its doors after an enforced closure of two months.

Such closures are commonplace and usually take place when the Israeli authorities fear that student unrest will become unmanageable.

During the past two years, Birzeit has been closed for a total of six and a half months.

On July 23, following the killing of three Arab students on the campus of Hebron University, the military governor closed the university and imposed an immediate six-day curfew.

Demonstrations against the Hebron killings have recently led to a two and a half year prison sentence for one Birzeit student with another 34 students receiving sentences of between six and 18 months.

Many of the students pursue their studies in the hope that at some future date they may serve as teachers, doctors and engineers in a Palestinian state which will be restored in some form or other. It is this belief in the restoration of Palestine - justified or not - to which the Israeli authorities react.

Apart from the closures, there is a continuous policy of detention and house arrest. To date, there are 23 students under house arrest with a further six lecturers from Gaza University also confined to their houses.

These measures are not confined to universities. The reopening of schools after this summer's break was delayed for a month. Students taking the *tawfihi* matriculation exam are frequently put under house arrest for the duration of the exam.

In August this year, the Al-Jalil Bridge leading into Jordan was closed to all Palestinians under the age of 18. This prevented students crossing over to Amman to begin or continue their university studies there. It also, however, prevented migrant workers and their families from returning to their jobs in other Arab states. The ban is still in operation though it now applies specifically to young people between the ages of 18 and 27.

For some students, the interruption of their studies is totally demoralizing. In the words of one young student, "I was prevented from returning to my university in Germany. I feel as if I am dying. I have no future. I'm a prisoner in my own town."

He was halfway through an engineering course when he returned home to Hebron in order to avoid deportation to Jordan where he would have been liable to do military service.

Though not a political activist, he has found it difficult to avoid being involved in political action. When a friend at Hebron University, he found himself helping to carry away a body injured on July 23.

Most students want simply to complete their studies and start working. "Because our studies are interrupted so much," one girl said, "we have to plan our own course and decide among ourselves what reading we ought to be doing."

Even when their studies are completed their troubles are not yet over. Salaries on the West Bank are generally much lower than in Israel though for teachers, the Jordanian government tries to make up the shortfall.

The existence of unions is allowed in theory though not in practice. Activists in a strike last year over teachers' pay and conditions were harassed by the military authority to schools in rural areas where conditions were even worse.

These measures may, however, be counter-productive. Despite the difficulties they face, Palestinian students tend to be high-fliers.

High price of job security

WEST GERMANY

Caroline Cuss reports on a teacher sacked for political activities

Being a teacher and civil servant in Germany confers enormous financial benefits and privileges, but the personal price can be high.

Civil servants must take an oath binding themselves to free democratic order, meaning that they must refrain from any extreme form of political activity. Any contravention of this code can result in disqualification from the teaching profession.

Herr Erich Kretzer, a teacher in Bavaria, recently won a court case (TBS, October 21), against the state after fighting for seven years to be taken on as a civil servant on trial. The Bavarian education ministry had doubted his loyalty to the constitution because of his past student political loyalties.

However the case of Herr Karl-Otto Eckartsberg, for eight years a teacher of English, social studies and sport, and departmental head at a comprehensive school, near Hanover, has ended rather differently. In September the disciplinary chamber of the Administrative Court in Hanover ruled that he should be "removed from service" because he had stood as a candidate for the German Communist Party (DKP) in the Garbsen local elections in September 1981.

Herr Eckartsberg has been a member of the DKP since 1979, and was a member of the SPD for 10 years before that.

When the regional government of Hanover learned of his candidacy, it instigated preliminary proceedings

against him, during which he had the opportunity to remove doubts about his loyalty to the constitution. As a result, in the view of the authority, he failed to do this, further proceedings were set in motion, culminating in the September judgment against him.

Herr Eckartsberg will appeal against this, but during his suspension, his salary can be cut by up to half, a matter which is being considered by the regional government of Hanover in the light of his financial situation. Any work Herr Eckartsberg wants to do while suspended must first be approved by the authorities, in accordance with civil service law.

The judgment was based on a 1981 ruling by the National Administrative Court that the aims of the DKP were anti-constitutional, and that any civil servant who actively supported or canvassed for it was committing a serious professional misdemeanour. Herr Eckartsberg is only the first of a sizeable group. Initially, 20 teachers in Niedersachsen were accused of standing for the DKP. Two who did not have civil servant status were merely given a warning. Droppings another two were dropped because they promised never to stand for the DKP again.

Herr Eckartsberg was one of the remaining 16. The other 15 (five from Hanover and 10 from West-Emm) had also stood as candidates for the DKP in September 1981, and a handful of them again in March 1982. Court hearings in these cases will probably come up early next year.

For Herr Eckartsberg, there is no question of renouncing his political opinions. "The aims of the DKP are perfectly reconcilable with our West German Constitution," he insisted. "Otherwise I would not be supporting the party or its views."

MOTIVATING MATHS

Geoffrey Howson discusses the unreality of what is taught in schools

These two items and the data relating to students' responses to them are taken from an important investigation, the Concepts in Secondary Mathematics and Science Project, recently carried out in England involving many pupils from a wide and representative selection of schools.

Within figures four hundred thousand and seventythree

Age	12	13	14	15
Right answer (%)	42	51	57	57
Subtract	2312			
	-547			
	1765			

Age	12	13	14	15
Right answer (%)	81	81	82	86

The results may shock, but it is not my aim to emphasize that after 10 years of full-time education one to every three children would seem incapable of doing a straightforward subtraction. Nor am I particularly concerned with whether or not, in a calculator age, this is a useful skill. In fact, results from the Second International Mathematics Study suggest that pupils elsewhere find difficulty in answering such mathematics problems currently.

Probably the most distressing feature of the data shown here, and of much more to be found in the report of the CSMS Project, is the way in which the proportion of right answers hardly increased over three years of schooling. In some instances these levels actually decreased, for example:

Sixthens as a decimal is 0.6. How would you write six as a decimal three hundredths?

Age	12	13	14	15
Right answer (%)	60	60	69	57

Of course, there were many items on which scores increased. Nevertheless, one is continually struck on reading the report (*Children's Understanding of Mathematics* by K. M. Hart, Murray 1981) by how slowly pupils developed mathematical competence.

The authors of the report recognize this and infer that "mathematics is a very difficult subject for most children". This conclusion has had important repercussions on English educational thought, but before we go on to examine these, let us consider a test item from the first maths survey of the National Assessment of Educational Performance in the US which throws new light on the problem.

Candidate A received 70 per cent of the votes cast in an election. If 4,200 votes are cast in the election, how many votes did he receive?

Age	13	17	adult
Right answer (%)	10	41	62

At 13 most children had been studying percentages in school. One would have expected a much higher success rate. However, as schooldays receded one might have expected the knowledge of percentages to decline. It would be easy to infer from the results at 13 that percentages were "very difficult". Yet, it would seem that the majority of adults can teach themselves to cope with them. "Difficulty" then is not the only factor influencing the learning of mathematics.

Yet "difficulty" is a key factor, and it is still not clear that "most children" can learn mathematics to any great extent. In the past the amount of mathematics which all children can learn has often been thought to be circumscribed in terms of content - it has been assumed that the mathematical horizons of most children must be limited to arithmetic and basic mensuration. Now the emphasis is beginning to switch to another type of description, to levels of cognition or understanding. For example, the CSMS study indicated that more children can operate at the first, basic cognitive level with vector algebra than can do so with ordinary fractions.

As might be expected, the numbers getting correct answers decreased rapidly when negative numbers were introduced or the vectors were set in a geometrical context. That pupils should be task dependent upon their drawing upon knowledge from two or more fields to be more difficult than those employing few prerequisites is not surprising.

However, results such as these do pose the curriculum developer with a new problem. Should we aim for extensive syllabus coverage - while expecting the lower-attaining pupils to obtain only a shallow understanding - or should we provide these pupils with a restricted syllabus and try for a deeper understanding of that, indeed a level of understanding which permits the knowledge gained actually to be employed usefully?

The Cockcroft Committee recommended that we follow the latter course and restrict the range of mathematics to be covered, particularly with

pupils of average and less than average ability. Thus, within the 11-16 secondary school, differentiated curricula at three main levels are proposed. Moreover, these curricula are differentiated not only by syllabus content and teaching methods but in mathematical goals. Such a move is, of course, strongly at odds with current practice in, say, the Soviet Union.

For instance, it is suggested that up to 40 per cent of English children should receive little formal algebra, whereas in theory all school pupils in the Soviet Union are introduced to calculus. In England few children study formal geometry; in the Soviet Union all children are introduced to theorems.

It would, to say the least, seem strange that two countries should have arrived at such widely different conclusions concerning the feasibility of "mathematics for all", and one is bound to question whether our goals for the below-average are not set too low.

Yet will differentiation of curricula alone be the answer to our problems?

The cry of "mathematics for all" is an appealing one. It suggests, like "medical care and welfare services for all", that there is a deprived section of the community which on humanitarian and egalitarian grounds should be given opportunities. It has not to date possessed. To a certain extent this is true, but unfortunately there are important differences.

To be denied false teeth, medicine or adequate sanitation or food is one thing - to be denied mathematics another. The benefits of having false teeth are obvious, those of being able to study secondary school mathematics frequently less so. Indeed, the figures I quoted earlier relating to the slow progress and sometimes falling-off in pupils' attainment, would seem to be due in large measure to the deliberate rejection of the subject matter by many students.

Recently, I was told by one who has great familiarity with what is happening in classrooms throughout England, that he was appalled by the number of students he saw who had effectively withdrawn from learning mathematics. Moreover, and this was the most chilling fact, this withdrawal appeared to have little to do with the quality of teaching in the classroom. Good teachers were no more successful than others in attracting these children to mathematics.

Clearly large numbers of pupils do not see any point in learning the mathematics which is currently taught to them. My knowledge of other countries suggests that this is not a peculiarly English phenomenon.

It is essential, then to consider more seriously than we have done in the past the motivation of students and to realize that this is considerably influenced by changes in society and in their social milieu. Here we note that the first section of the Cockcroft Report is entitled "Why teach mathematics?" Regrettably there is no corresponding section called "Why learn mathematics?" Yet it must never be assumed that motivations for teaching automatically translate into motivations for learning.

"Mathematics for all" did, in the 1960s, solve an obvious problem of deprivation: for an increasing number of jobs, mathematics was becoming a necessity either for the reason that mathematical skills were demanded of the employees of that it was being used as a sieve in order to restrict entry to a profession. If children were being denied the opportunity to learn mathematics then they were being socially deprived.

The emphasis then lay on studying mathematics because success in it was instrumental in enabling the student to progress, to secure employment, . . . This led, and still leads, the student to adopt a certain rationale for learning mathematics; what Mellin-Olsen has described as the I-rationale.

This I-rationale is a most powerful aid in mathematics education. Teachers at all levels are heavily upon it: "learn this because it will be needed in the examinations"; "Study mathematics because it provides an entrée to so many jobs".

It is, in fact, a powerful rationale for learning mathematics and one which it is legitimate, indeed essential, to employ. However, we must recognize three important facts:

● Over-dependence on its use can lead to a distortion of the aims and the effects of mathematics education.

● It does not account for all types of mathematics learning.

● It probably never was sufficient to motivate all pupils, but now with ever-increasing unemployment and changing social conditions it is losing its appeal for many. A qualification in mathematics



Shilton soars, but is 'narrowing the angle' a genuine example of useful mathematics?

at 16 is not a passport to a job.

The I-rationale will not suffice then to provide motivation for those who are at present "opting-out" of mathematics and of schooling in general. Something more is needed. This is what Mellin-Olsen refers to as the S-rationale: that is, one chooses to learn/study a piece of mathematics or participate in a certain type of mathematical activity because for some reason or other (and the exact reason might be hard to identify) that mathematics is significant to oneself according to one's own norms. Ideally the I and S rationales should work together, reinforcing each other.

The key problems, however, easily stated but, alas, not so easily answered, are:

"How do we select mathematics so as to provide the learner with S-rationale?"

The exhortation to "make it interesting and appealing", to challenge what the child sees on the TV by turning the classroom into an all-action, three-ring circus has practical limitations. While not seeking to deny the place of "interest" and "appeal", the teacher simply is not able to cope with the continual provision of such a diet - nor is the learning of mathematics amenable to such treatment.

Just as in mastering a musical instrument there is a need to practise and build up a technique, so there is in mathematics. Moreover, there is a need to think and reflect after an activity, to abstract (even at a low level) and to consider general cases. What one aims to do with the young musician is build up a rationale for mastering an instrument which will enable him/her to accept the less appealing aspects of practice as necessary steps towards a desired goal.

So, it must also be in mathematics. The

student's rationale must be sufficiently developed to sustain him/her through the less-exciting moments, which again must be recognized by the student as contributing to a self-accepted goal.

Much has been said about the need to bring "relevance" and the "real world" into our mathematics teaching. Again, while accepting the need wherever possible to use the environment as a means of motivation and as a starting-point for the study of mathematical topics, there are important caveats.

The reality on which the discussion is based must be the reality of the child - and this can differ very much from that of the teacher or the textbook writer. The US example I quoted earlier concerns the real world but it is not concerned with matters within the children's knowledge or interest. It is also unfortunately the case that reality for the disadvantaged child is often extremely limited and, indeed, research has indicated that the low-attainer is unlikely to take any great interest in the wider world.

The relevance of mathematics must be demonstrated, then, in a stronger and more individual way to such students; they must be helped to see how mathematics can contribute to their knowledge for survival, indeed, to their whole process of socialization. Mathematics must be shown to help the inarticulate to express their wishes and demands.

Here it is important to emphasize that even the most disadvantaged child has some knowledge of his environment, of his needs, wants and problems, and has ideas about what can be done to alleviate his condition. There will not be a match between the knowledge and outlook of teacher and pupil: it is important then that the teacher should make a positive attempt to understand the pupil's background and base his classroom actions upon his findings.

There is also an important pedagogical distinction to be made about 'real' mathematics in schools - are we using the environment to test our mathematics or our mathematics to solve environmental problems?

When we consider, say, the mathematics of where the goalkeeper should stand to narrow the angle in football, we are essentially legitimizing our mathematics. It is an interesting example, but one which uses the environment for mathematical purposes rather than vice-versa. The football fan will know that Shilton did not become famous because of his mathematical ability and will be unlikely to see such an example as being particularly significant. It might interest and amuse, and provide a change from the daily routine, but will scarcely help develop the pupil's S-rationale.

Similar criticisms could be made of much project work which appears to be founded on the belief that mathematics is self-justifying as soon as it is applied to familiar objects or activities. Whatever the merits of such work it will not necessarily be recognized by the pupil as "significant to himself". Such activities do not by themselves create a rationale for studying mathematics.

I should prefer than to see emphasis given to mathematics applied to environmental problems where the "environment" in which the individual is embedded may be biological, sociocultural or whatever. This will almost certainly be best achieved through project work in which the pupil is involved, in the sense that the activity has meaning and significance for him, and that conceivably the newly-acquired knowledge will lead to changed behaviour - physical, social, economic.

Such activities will not constitute a satisfactory mathematics course by themselves - there is a need for a structured curriculum with due weight given to the acquisition of mathematical concepts in a pedagogically-structured manner, to the acquisition of techniques and to the continuous planned revision and consolidation of both understanding and skills. These are unlikely to follow from a diet of "activities", investigations and projects.

Yet such activities can provide motivation for learning mathematics; they can help the student come to see mathematics as something which has significance for him or her. They can, therefore, help provide motivation and a rationale for learning. If such motivation and rationales do not exist then the mathematics teacher's task becomes not merely difficult, but impossible. For this reason it is essential that we should pay more attention to the growing problem of ensuring that our pupils see purpose in studying mathematics.

Geoffrey Howson is director of the new Centre for Mathematics Education, University of Southampton.

Richard Woolfson
describes research which
suggests teachers can
learn what goes on
inside pupils' minds
from their handwriting.

There is size in my sand
dogs are home and I
river and it tells me
all that is make up
milk and I got master

This could be an important factor in learning. A teacher will generally use a particular teaching style to suit a particular child. For example, if a child has a marked tendency not to respond to any questions put to him, the teacher may regard him either as lazy or as timid. The teacher may adopt a

Richard Woolfson is an educational psychologist at the Child Guidance Centre.

I have a friends
wicks But my Dad
clears i see
have a lot of sis

Today I got a poster.
The man who told me
and his name was
ferr. And the colour
every year volume and
The car said. But we
said on the top of
chevrolet and the

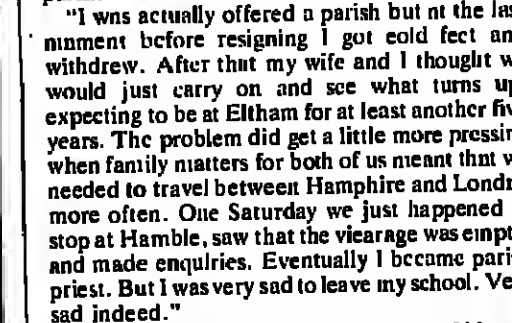
My Name is _____
I like going to foot
machines and seeing
cable. I do not like
because the teachers
on you're the per
we play foot ball
in the house for
some times fitting
with my mum and
but in class I am
very good my class
in school over my
not in it.

NOTES

selection at 12-plus, so that some children at the school transferred to grammar school after two years. It was a system I couldn't continue to accept. When I was appointed the scheme was referred to as 'interim' but it still operated when I left, eight years later. I think they just removed the word 'interim'."

As well as being against selection, Maurice Clarke has other forthright views on education. He is a fierce opponent of corporal punishment.

Schools should drop religious education says the Reverend Maurice Clarke who gave up a headship for the Church.



In 1980, just before starting as head of Eltham Green, Maurice Clarke was married. Before then, throughout the time he was a priest and teacher, he had maintained what he called "practical celibacy", not for a religious reason itself, but because he felt he could not carry out both jobs satisfactorily and be married at the same time. He valued the flexibility of being single and the sense of independence it gave him to follow his chosen paths.

"I was determined to remain celibate but more often than not you meet somebody and you feel

"I don't regret it," he says, gazing from the window of his book-lined vicarage study across the Norman church, "but the dilemma continues."

Nick Baker

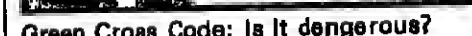
**Next week:
For the sake of
peace; why Mary
Milfington gave
up teaching to
protest at
Greenham Common**

Now more older children get killed on the roads than younger ones, secondary schools should take traffic safety more seriously argues Barbara Preston

Change in the numbers at risk in these age groups due to the rise and fall of the birth rate. From 1971 to 1981 the number of children under 10 years of age dropped by just over two million, whereas the number of young people aged from 10 to 20 years increased by nearly a million. But education is n

However, apart from crossgig at zebr crossings, knowing the stopping distances is not much help to pedestrians. As research has shown, drivers do not stop or even slow down when they see a pedestrian on a main road; they expect the pedestrian to get out of the way. Any assumption that a driver will stop to give a child right of way across the road can lead to a serious or fatal accident. Even the Green Cross Code injunction to "give drivers a chance to see you clearly" could be dangerous since it may make children feel that if the driver has seen them they will be safe.

There is no specific road safety education aimed at teenage pedestrians. Younger children are taught the Green Cross Code, but this is only applicable on quiet roads. The child is taught: "traffic is coming, let it pass. Look all round again."



Secondary school children must learn to cross busy roads. The way most adults do it is in assessing the speed of the traffic and look for gaps. They wait off to cross the road, often as a vehicle is passing when they have estimated that they can safely cross the nearside of the road and that, when they reach the centre of the road there is likely to be a gap in the traffic in the other direction.

It would seem, therefore, very necessary, not only for children while they are at secondary schools, but also as an important training in adulthood, to try and teach older children to walk with fast traffic on busy roads.

Barbara Preston recently retired from Manchester Polytechnic where she was a lecturer in research methods and statistics.

BARRY KEW

School pupils themselves have recently been more willing to exercise their right to refuse to dissect animals,

TOM BROWNE

LAN SHARP

The reactions of friends and colleagues to my venture ranged from blind disbelief to mild admiration. The school staff thought at first that I was brave, not to say foolhardy, and

Unfortunately, schools tend to err towards support for the various forms of systematic animal abuse sanctioned by the Government, and examining boards have, until recently, placed emphasis on dissection, contained in almost all syllabuses. The "need" for dissection is not real. (Even Oxbridge accepts students for biology without A level). Newham education committee is taking a lead by looking specifically

Whole class sets of *Kidnapped, Biggles Comes Out and Funs With Dick and Jane*, will grace the shelves with their much-sellotaped spines.

This post becomes vacant on the promotion of the present Head.

Tired of eking out his capitacion on toilet rolls, paper towels and light bulbs, the previous head has conned a university in Suddi Arabia into taking him on aa a research fellow. His proposed area of research helms The

When the local education authority's chief inspector of schools came in to see how I was getting on I was as nervous as any beginner teacher . . . why wouldn't the children open out and talk about what they'd been doing? But as the weeks went by and I

Those in the animal rights movement are convinced that the overwhelming outcome of animals in schools is animal suffering, present and future, and that benefit to pupils is

There is a flourishing Friends of the School Association.
You will spend all your leisure time

Barry Kew makes craft and design at Sir John Gleed Boys' High School, Spalding and is secretary of the Spalding National Anti-vivisection Society.

Tom Browne teaches at Holbrook County Prison School, Ulatina.

ROGER HAMMOND

been told by headmasters and heads of department that students will not work

Every major school subject represents a territory bitterly fought over by publishers. Bryden Keenan offers a guide to form – both in terms of quality and relative success – in French

outcome of personalized pamphlets and a
opportunity for the development of individ-
talent and imagination. *Eclair* was the first co-
to have linked graded tests at levels 1-3, giving
profile based on assessment in strictly separate
skills - a lead followed by Nelson with *Ac-*
Year 1

With the dispersal of the large and talented team that produced *En ovan* it is natural that a number of that team should have turned to produce their own courses. That team, incidentally, was made up for some of the first teachers' bo-

2. C'est une sorte de crêpe. On mange ce crêpe avec du bœuf et des légumes.

has started at level 3 and will work out to level 4 and 5, when it may be classable as a copy, although for the moment the publishers prefer

to command it over prose translation because very ingenuity ensured that most preparatory work would have to be carried out in English.

Bryden Keenon is county inspector, mo longnoges, for Bedfordshire.

In some ways I feel children today

one finds that the grass is greener on the other side. It might be that the most realistic course of action is to invest in some fertilizer, to put on one's own grass.

of biology at Kings School, Birmingham
 horn and education officer for the
 Urban Wildlife Group, 11 Alton

have linked graded tests at levels 1-3, giving a profile based on assessment in strictly separate skills - a lead followed by Nelson with A

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ern

ARTS

The gadfly grows wary

Robin Buss on the successes and failures of Channel 4

A few weeks ago, Channel 4 devoted an entire Sunday evening to a three-part broadcast of the National Theatre production of Aeschylus' *Oresteia*, done according to classical Greek conventions in nask with an all-male cast. For most of the nation's viewers, they might as well have gone to the whole log and performed it in the original Greek.

Television caters for mass audiences, but C4 has a statutory commitment to minorities. The attempt to solve this dilemma while attracting the necessary advertising revenue has been the chief preoccupation of its first year. It has not been helped by the dispute over fees for commercials or by the sometimes dismally low standard of the comedy, quiz shows and other entertainment programmes which were supposed to pull in the audience, pursuing all of us at some time to look for and press that fourth button on our sets. After all, there is an insoluble contradiction between the ambitions of a television service which tries to adopt a critical stance towards the institutions of our capitalist, consumer society, while depending for its existence on revenue from commercial interests.

The results can be highly entertaining, as *Black and White*, *Jeopardy!*, *Ant and Dec's Saturday Night Takeaway*, *Cliff Moon's Reading* and *What Went Wrong?* were interspersed with advertisements.



Fulfilling its brief with American football, and committing "noble barakiri" with "The Oresteia"

apparently hand-picked to illustrate his thesis that we are continually bombarded by the images of a materialist consumer paradise. According to Seabrook, capitalism depends on its trying to convince us that our lives would be transformed if only we could acquire all the symbols of affluence – and the commercials duly complied. I only hope that their sponsors saw the joke.

The truth is that the dilemma cannot be solved, the danger that C4 will stealthily abandon its mission to change the face of television broadcasting. In the early days its chief executive, Jeremy Isaacs, showed a laudable firmness of purpose in weathering the first attacks. But the problem will not go away, the early controversies did have the merit of drawing attention to the new channel and, as Gillian Macdonald pointed out in an article in this paper (TES September 30), Isaacs' main concern now seems to be to improve the ratings, even if this means interpreting "minority audiences" as fans of reggae or American football.

The signs are there. The *Friday Alternative* (despite its faults of presentation and occasional errors of judgment, a unique attempt to provide a forum for dissenting views on current affairs) has gone. Its last transmission, cancelled, for reasons beyond our control, and its return next year

announced as being in a modified form. *Broadside* has succumbed to interim pressures. *Black and White* and *Eastern Eye* have vanished until mid-November. There has been no follow-up to the programme for homosexuals that caused such outrage last year. *State of the Nation* has been cut short. *Whatever You Want*, the provocative mixture of rock and current affairs for young people, has not survived the departure or the disillusionment of its presenter Keith Allen. Though *20/20 Vision* is to return in the new year, I can see no mention in the autumn schedules of programmes for women; and so on.

An arts blockbuster like *The Oresteia*, "boldly" scheduled to occupy a full Sunday evening, will not make a dent in the ratings; but if C4 wants to commit harakiri, this is a safe, even a noble way to do it. Culture is not popular, but it is non-controversial and everyone knows that it is a good thing. C4 appears to have decided that, if it has to go, its suicide note will take the form of a pious condemnation of our philistine disregard for Greek drama. There is to be no martyrdom, no cry of "history will absolve us" as it launches its guerrilla offensive against the bastions of society.

Not that it will go, of course, or that it has so far failed in its mission: in many respects it has fulfilled it triumphantly. It has given an outlet to



independent producers whose work has been consistently interesting and allowed C4 to put out many of the year's most exciting programmes. Any discriminating viewer will acknowledge that it has provided him with a high proportion of the television he will remember from the past 12 months and this is reflected in the attention and often the praise accorded by the press. Arts programmes, "fiction" and documentaries have been outstanding and, by drawing on talent from a variety of sources, C4 has at times started to pioneer new forms in television, breaching the "BBC code" and suggesting how the medium can find new forms of expression.

Most of all, if you want to hear unstinting praise for the new channel, go to any gathering of British film people. C4 has not been the only factor in the revival of a British film industry which was given up for dead, but money from it has played a significant part. To have made possible the production of such films as *Another Time, Another Place*, *The Ploughman's Lunch*, *Giro City* and *The Droughtsman's Contract* is a major achievement; and C4's contribution to cinema does not stop there. Its current season of Latin American films is the latest in a series of programmes giving viewers the opportunity to study world cinema, introduced by intelligent and informative documentaries and with plenty of

additional back-up.

In fact, educational (or "educative") broadcasting like this is an area where C4 has made particularly its own. *The Arabs*, *The Amateur Naturalist*, *But in Britain* and *The Spice of Life*, all currently running, are entertaining and instructive. They may not do much to change the viewer's perceptions or attitudes, they may not send him rushing out to collect water-beetles or persuade him to experiment with curried goat, but they are worth doing and something that television does well.

C4 has also fulfilled its brief to provide for certain minorities: young adults, old people, American footballers, enthusiasts for dud Hollywood movies... It has opted, in short, for a useful but safe role and a year after its first broadcast, is on the way to acceptance: a recent edition of *Radio Reply* even suggested that it might gain the Mary Whitehouse seal of approval.

As the amateur naturalist will tell you, the life expectancy of the gadfly (*Icterus maculicollis*) is brief and the response of its victims can be sudden and violent. At the start, C4 may have nipped the flanks of a few sacred cows and it will probably go on buzzing around them; but it is no gadfly now – at most a bluebottle. In television, even those who are rare enough and might seem churlish to be ungrateful for what we have got.

Eastern eyes

Heather Neill previews Farrukh Dhondy's television plays

Good at Art. The first of a series of six plays by Farrukh Dhondy. BBC2, Friday November 4, 6.55pm.

Farrukh Dhondy's name has been synonymous for some years with good writing for teenagers to multi-cultural Britain. Now he has adapted five of his short stories from the popular collections *Come to Mecca*, *Trip Trap* and *East End at Your Feet* for presentation as half-hour television plays on consecutive Fridays, beginning this evening. The sixth play in the series, *Romance*, has been specially written for the occasion.

The *Radio Times* short introduction is headed "Asian Way of Life". But it would be a pity, on the evidence of the first two, to consign these plays to a mental slot where they could be dismissed as well-intentioned, simply didactic or of interest to only one section of viewers distinguished by age or race. Which is not to detract from the initiative of Peter Ansorge, the producer, who knew a good writer when he saw one in the *Empire Road* days and decided to mount a series of "Asian" plays. The fact is that *Good at Art* and *The Bride* are dramatically satisfying by any standards.

Good at Art, a story of unrequited love, is literate, gentle, moving, and

culminates in a scene where the teenage Indian hero (attractively played by Tanveer Ghani) endures an Anglican funeral service in an agony of loss and alienation: his art teacher mentor is dead, the girl he loves lost to another. *The Bride*, a more melodramatic story about a white teenager's obsession with a Punjabi girl, has a marvellous performance by Phil Daniels, skinheading it along the school perimeter fence making monkey gestures, going from rags to riches and rags again. This technically complex story with its seven time-shifts was, says Farrukh Dhondy, particularly difficult to adapt. He has, however, enjoyed the process on the whole, accepting the restrictions of television convention philosophically and seeing it not as a writer's medium, but a cooperative one.

There is tension in these first two plays, but no violence and not much anger. Later contributions, *Come to Mecca* and *Salt on a Snake's Tail*, in

which there is an off-screen stabbing, may be more controversial. Farrukh Dhondy, an Indian himself, has an ear for the rhythms of popular speech – white skinned, Afro-Caribbean as well as Asian – and his dialogue translates well to the small screen. But he is, too, a literary writer, despite his assertion that he makes no claims to "art" and is simply pleased to give his stories a wider audience. *Good at Art* and *The Bride* make two intense, densely-textured plays, rich in ideas, jokes, tough speech and strong emotion. They reveal, too, their author's teaching background: the classroom relationships could not have been portrayed so successfully by anyone who had not experienced a large urban secondary school. But best of all, they are stories which do not sell an explicit anti-racist message. Farrukh Dhondy believes that putting ideology before the story is certain to kill the story, and telling a gripping tale is what these plays are all about.



Phil Daniels as Tony in "The Bride"

£5 to him. £7.50 each to E J Elwin and Hazel Stanley and £10 each to George Moor and Bill Greenwell.

I will not vote for people tall. Now, Labour candidates are small – Pit-pout Welsh, a sturdy sort. Like horses valuable – and short.

Chamberlain was a giraffe. Though Mr Heath's more like Falstaff. You cannot feel at home with people like this above you, or a steepie.

The basket where I'll trust my eggs? The candidate with shortest legs. For small is difficult I've found. The ears are closer to the ground. George Moor

A touch of the forelock From Putney to Portlock. George Moor was definitely not voting Tory.

I'll keep good distance from a Party That turned a pound note to a Swartie.

But this was too rational. We wanted you to be totally irrational. N J Warburton came near with his last line: So I looks them up in the OED. I'll go by what that states. "Pains of childbirth?" "Opposed to change?" So that's what they're getting at! What's SDP stand for? That's strange. Not there.

In the dump where I works The boss calls us "jerks". So I shouldn't vote Tory, oow, should I?

Nowadays, we are all too familiar with mixed-media practice but in this exhibition we can pass in a few seconds from a still precisely executed water-colour repeat-pattern done by one of Marion Richardson's pupils at Dudley High School around 1930 to one done in 1952. In which newspaper, string, tape, patterned and silver paper are collaged into an admirably coherent but much more freely worked design.

In addition, we can compare the relatively tight if rhythmically effective brush-drawing of trees done by a pupil of Barclay-Russell's at Charterhouse School in 1935 with the much more lyrical (the category is Barclay-Russell's) treatment of a similar subject done by a girl of almost the same age at a Brighton secondary school in 1947.

British art education in the inter-war years had come to recognize the value of children's art but following educationalists like Franz Cisek, most believed that there was an unavoidable loss of spontaneous creative energy with puberty. Barclay-Russell did not.

The catalogue suggests that he did not keep the ideas of Cisek on child art separate from those pioneered at the Bauhaus with adolescents and young adults. Cisek and Freud come together in a quotation from J C Hill's 1935 "The Teacher in Training", used in the exhibition, in which the growth of the child is compared with that of a tree not that of a wall, built brick by brick.

This is certainly supported by the work on show, where there is no discernible break between childhood and adolescence, except in the way that Barclay-Russell and his disciples understood the change. For them, child art was relatively impersonal (a group of 10 to 11-year-olds' pictures by Marion Richardson's pupils in 1937 reveal essentially common ways of structuring and interpreting a wedding scene) while adolescent (so called it was) meant a more personal, more varied, personalized ways.

Michael Clarke

Literary competition

Competition No 44. Report by Scylla. You were asked to put into verse some odd reasons for voting for a particular party. The result of this election was a narrow win for the Tories, with SDP second; but there is nothing for Thatcher or Owen to get excited about. Tory voters were persuaded by such things as Nigel Lawson's fondness for budgies (C Fever), while M Benn said he had to vote Tory because of being taught:

A touch of the forelock From Putney to Portlock.

George Moor was definitely not voting Tory.

I'll keep good distance from a Party That turned a pound note to a Swartie.

But this was too rational. We wanted you to be totally irrational. N J Warburton came near with his last line: So I looks them up in the OED. I'll go by what that states. "Pains of childbirth?" "Opposed to change?" So that's what they're getting at! What's SDP stand for? That's strange. Not there.

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Barclay-Russell

Message understood

Horizon: A Child's Guide to Languages. BBC2 Monday; repeated Sunday November 5.

"We acquire language in only one way: when we understand messages. That's it. We've tried everything else. We've tried teaching grammar, we've tried having students memorize vocabulary, we've had people memorize dialogues, sit in front of machines – next we'll try electric shock. But the only thing that works, the only thing that counts, is giving people messages they understand." Stephen Krashen, a Californian linguistics professor, thus put the case in *Monday's Horizon* for a radical change in attitudes towards language-teaching. "We acquire language", he said, "when we understand what is said, not how it's said. But when we teach language today we usually do the opposite: we give people a rule and then have them practise the rule, and we tell them if they got it right or wrong."

The simple conclusion was that second languages should be taught the way first languages are – by putting initial emphasis on understanding and seeing to the "fine-tuning" of grammar afterwards. Professor Krashen gave a delightful demonstration of a comprehensible first lesson in German – "this is my mouth, these are my ears – one, two – two ears" – while American schoolchildren were shown being taught Spanish by a method called "total physical response", obeying commands to walk, stop, turn around and sit (prompting the reflection that dogs learn native languages too).

"The most successful method of all was the well-known 'total immersion' method adopted in Canada, where English-speaking children are taught all their lessons in French. At Goffs School in Cheshunt a similar project was yielding good results: some of the pupils do a level French while still in the fifth form.

It was all extremely encouraging – except that, as Nigel Reeves of the University of Surrey pointed out, there is little incentive for teachers to change their methods while GCE boards are still more interested in the academic, written side of language than in oral, or aural, proficiency.

Lynne Truss

Inner battle

Betka Zamoyska previews BBC1's drama-documentary on Luther



Martin Luther – Heretic. BBC1, Tuesday, November 8, 9.25pm.

Luther's five-hundredth anniversary is being celebrated in the heat of a new controversy that has grown up around the founder of the sixteenth century Reformation. According to a report in the BBC's *Times* last month, Luther is now hailed as a national figure by the East Germans, who have recently discovered that in true Marxist tradition he was a man of the people, whereas to the West Germans he represents the freedom of the individual. Norman Stono's film drama *Martin Luther – Heretic* to be shown on Tuesday, November 8 (two days before Luther's actual anniversary) brings back into focus the real character of the *Augustinian monk* who split the western world in two.

Far from being concerned with political ideologies, Luther was fighting an inner battle for the salvation of his

soul. Throughout his life he was haunted by his dread of the Last Judgment and his literal belief in hellfire. Jonathan Pryce as Luther reveals his predicament with a burning intensity. The opening shots show him returning to Wittenberg after leaving his safe retreat at Wartburg Castle and then in flashback the film presents the key points in Luther's life up to 1522. Surprisingly, since it was shot in Somerset, it manages to convey the atmosphere of medieval Germany, although the townscape was in fact an old farmyard and the monastic settings are Milton Abbey and Sherborne School. The crowd scenes in particular, look like details from a Breughel painting.

Maurice Denham is perfectly cast as Father Staupitz, the wise old father superior who tells Luther to "Eat more food, get more sleep, learn more about God" and sends him off to Wittenberg to teach at the university. It was here that he found a way out of his personal dilemma. He realized that salvation could not be bought with "works" (observance of the sacraments) or by purchasing indulgences, it had to depend upon faith alone. When he published his views in a set of 95 theses (which he nailed to the door of the castle church in Wittenberg in 1517), he set alight a new spirit of nationalism in Germany which enraged the Church of Rome. Had it not been for the political instability of Germany at this time and the protection of Frederick of Saxony, the ruler of Luther's state, he would almost certainly have been burnt as a heretic.

The intensity of the drama is relieved by a talented troupe, "The Medieval Players" who re-enact a slapstick version of the proclamation of the Peppal Bull against Luther to entertain the German crowds. The Players use traditional props of the

period and play medieval instruments. The voice-overs explaining Catholic dogma to the uninitiated sometimes distract from the fast-moving pace of the film but William Nicholson's script, based on contemporary writings, is full of quirky comment and asides which bring the earnest theological debates to life. An interchange between Father Staupitz and Luther highlights the contrasting characters of the two men.

Staupitz: I'm told you were in the confessional yesterday evening for six hours. Luther: Yes, Fr Staupitz. Staupitz: Doesn't that strike you as (opening his eyes wide) – greedy? Luther: If I commit a sin, father, I must confess it.

Staupitz: Six hours... So you are now free from sin? Luther: No, Fr Staupitz. The one aspect of Luther's character which this play does not reveal is his coarse sense of humour. A little more light relief would not have done him any harm in this otherwise compelling drama.

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John Maynard Keynes. By R Skidelsky.
Macmillan £14.95. 0 333 11590 6.

Professor Skidelsky arrived at Keynes by the somewhat unusual route of Sir Oswald Mosley. Awarded a fellowship given to Britain in gratitude by some of its refugees, Skidelsky wrote a controversial life of our local gauleiter which drew attention to the undoubted fact that Mosley was a radical thinker about unemployment and was, indeed, sympathetic to Keynes's thinking before other politicians usually were.

Keynes was a Cambridge economist (1883-1946), who exercised increasing influence on economic policy. After his death in 1946 the prevailing economic orthodoxy was labelled "Keynesianism". It is doubtful whether "Keynesianism" had much to do with Keynes. Nevertheless, in his own right, and politics aside, Keynes was a fascinating man. After considerable struggles, Professor Skidelsky got access to most of the relevant papers, of which vast amounts survive. Keynes and his circle were the last non-telephonic correspondents - and this is the first volume of a monumental biography.

It is excellent. Already, from this first volume, it is clear that it will be the best Bloomsbury biography, topping the Everest of books on Virginia, Vanessa, Lytton, etc. Keynes seems to have slept with every (male) Bloomsbury and Skidelsky hops from bed to bed and dinner table to dinner table with an alpinist's agility.

It is also exceedingly good on the economics, though I think there will be some professional nuances with which I will disagree as the work progresses. I am far more inclined to emphasize Keynes's orthodoxy than his originality for which far too much has been claimed, and I think some of



Skidelsky's sources are not unbiased. I regret, too, a note of unfairness to Keynes's earlier biographer, Sir Roy Harrod.

What is clear is that Keynes was a towering figure because he was a thinker, a writer and a man of the world. Skidelsky is good on every aspect of this varied career. For readers of *The TES*, two aspects of his life merit special attention.

First, his moral philosophy, derived from Moore, came from one of the great schools of recent western philosophy, which bred both some important aspects of mathematical logic, and analytic thought. Its essential relativism on moral matters, and its elevation of personal happiness to so high a level, can be seen as a potent influence on much recent education. Many influential and respected thinkers who have directly and indirectly influenced many teachers regard this moral view as a great liberation from earlier

prudery. Others might be tempted to agree with (for example) Dame Rebecca West that there is more to moral conduct, for example goodness even in politics, than personal happiness. This is not necessarily a priggish view. The general confession that all of us who are Christians make every Sunday forces us to admit appalling sins, even if we are elderly grandfathers or innocent young spinsters. The sense of an objective morality which makes us all unworthy is not a priggish or prudish doctrine, though it's a hard one.

The other matter which affects readers of *The TES* is an aspect of social history. The intellectual coterie, the snobbery, the sheer swiftness of the Apostles (the exclusive Cambridge club) is exposed more fully by Skidelsky than by earlier writers. For the first time for many years I find myself sympathetic to F. R. Leavis and D. H. Lawrence in their attitude to Bloomsbury, the Apostles and all that crowd. Leavis was surely essentially correct that when the history of the early twentieth century came to be written their influence on the nation as a whole, as well as over Cambridge, would bear detailed examination. It is not only that their personal lives were a mess - and an unhappy mess. It is, rather, their easy assumption that life was to be lived as members of a superior caste who picked their colleagues and successors, praised each other's books and feeble pictures, and sneered at everybody else, especially "board school" products (ie us) - essentially Blunt's attitude which merits examination, and condemnation which they have themselves invited. Meanwhile, you might still be wise not to send your sons to a couple of Cambridge colleges, whose heads have never yet been "board school" boys.

John Valzey

Ancient ways

Finley's absorbing book *Politics in the Ancient World* (Cambridge £15.00 and £5.95), starts from the little-headed difference of Aristotle that different forms of government represent the different interests of separate social classes. Oligarchy is to the advantage of the rich, democracy to the advantage of the poor. The clear facts that in both Greece and Rome the ruling classes were usually the wealthy, and that law usually reflected without mitigating economic differences, were not much regarded by ancient or modern historians before Finley's own generation.

The Greek city-states, Finley points out, were the first to draw the free working class into the political community. How far individuals and sectional interests did participate in political life is the theme of one of his chapters; and how far did financial aid provide the answer? Why was there so little resistance when the possibility of citizen-participation began to vanish under the power of Macedon and later of the Roman Emperors? The city-states, including the Roman Republic, had ceased to serve the citizen's economic interests. Politics died.

The Cambridge History of Classical Literature is now available for the Roman but not for the Greek half of its vast subject. Scholars from Britain and America have contributed essays to these five volumes (£5.50 or £7.50 each, according to thickness). There is personal appraisal as well as reference material in these essays. Each volume also contains full lists of surviving authors and their works, with bibliography; and of Metrical Appendix is printed at the back of every volume. Any library used by students of literature should have this work. All quotations are translated.

Elisabeth Henry

Blighted lives

Introduction to Race Relations. By E E Cashmore and B. Troyna.
Routledge and Kegan Paul £5.95. 0 7100 0930 4.

Teaching About Prejudice.
Minority Rights Group Report No. 50.
£1.20. 0 305 6252.

Writing textbooks is notoriously difficult. They must be comprehensive but concise; balanced but not bland; clear and logical, and if they are not to bore readers and authors to death, they must include some measure of the latter's own, original perspective. These tasks are especially demanding in the field of race relations because of its burgeoning international literature, ranging from sophisticated studies to undisciplined polemic, and because of the discomfort the subject arouses. No reader comes now to the subject and so beliefs and prejudices must be challenged.

How do Cashmore and Troyna cope with these demands? Their canvas is refreshingly broad, going beyond the inevitable examination of immigration and its control, and of employment, housing and education to include an authoritative account of the media's influence on race relations and lively speculation, (as it must largely be without empirical studies), about the young blacks' response to the frustrations and discrimination their parents chose mostly to ignore. The best chapters are on work, class and inequality, cities, space and politics and the media. The focus is largely on Britain but helpful parallels are drawn with the United States. The literature cited is comprehensive and up to date. By insisting that race relations must be examined in their social, political and historical contexts the authors avoid oversimplifying the problems, their origins or their solutions. This may not seem much to ask but those familiar with race relations literature, ancient and modern, will know just how rare such complex analyses. Cashmore and Troyna are attracted by a Marxist perspective but their sense of history is too strong to permit its cruder claim that racism is simply one of the nastiest

but most carefully nurtured off-spring of capitalism. They tread delicately and successfully the well-worn paths of the quarrels about the relative importance of class and ethnicity in social stratification and conflict. All this is an excellent foundation for a textbook; but there are some flaws.

Teachers will always quarrel about priorities, but in race relations mine are clarity about concepts and a grasp of the context and content of social policies which will reduce class and ethnic inequalities and the persistent racial discrimination that blights the lives of black people in Britain. Most people are aware of direct discrimination but many simply do not understand the more insidious indirect or institutionalized racism. Cashmore and Troyna deplore its heinous effects but do not explain its forms or origins. Post-racial discrimination can be an equally mysterious and misunderstood concept. Although Cashmore and Troyna skirt briefly around the theoretical arguments for and against it, it would be illuminating to have illustrations of its various forms, ranging from the highly contentious, such as quotas, to the straightforward techniques for opening up opportunities. The authors were constrained by space but the centrality they accord to racism would have been better served by less on the detailed recent history of modern racist Fascist organizations and more on the context of everyday discrimination and the policies needed to combat it.

More frustrating is their tendency to outline conflicting perspectives without helping the reader weigh up which might be the better empirically based or the likely outcome of adherence to a particular view. Since they are so interested in the historical consequences of various theories about racial differences they could be more aware of the implications of their own analyses, particularly their central claim, tantalizingly undeveloped, that in race relations the dominant ideas are not simply those of the ruling class but that "groups designated racial inferior contribute to the maintenance of inequalities by believing in them; or even

not rejecting them" (page 40). Do they? Now? In Britain and the US?

This issue should be properly explored in the chapter on education, the weakest in the book. One senses that the authors are understandably wary of the mayhem and confusion about the ends and means of multicultural education but it is insufficient to imply that it matters not whether the initiatives taken in schools are compensatory, aimed at changing the attitudes of the pupils either towards the education system or themselves, or whether they respond to Stone's injunction for a more academically orientated curriculum (page 156). It means a great deal to young people whether they are reading, even if ill prepared for life after school, about education which is not racist, even though education will not radically enhance the life chances of those for whom racism is a reality. Cashmore and Troyna are critical of those for whom radical change is the only one worth contemplating but their analysis of education is uncharacteristically sweeping and superficial. They do not, for example, discuss the dangers, let alone the poor empirical base, of cultural deficit theories and black alleged poor self image. These theories, for example, shape teachers' expectations of black children and set the scene for self fulfilling prophecies. This matters in a text addressed to those with a practical as well as an academic interest in race relations. Teachers who want a thoughtful analysis of the issues as well as extremely practical ideas about combating race prejudice will gain much from the excellent and concise papers published by the Minority Rights Group.

Like many ambitious books *Introduction to Race Relations* is a hard and at times confusing read, not made easier by an irritating folksy style. But there is also a good deal to commend it and used selectively by critical teachers it could be a worthwhile text.

Juliet Cheetham

Stone, M. (1981) *The Education of the Black Child*. Fontana.

Any advances?

Advanced Mathematics Book 2. By M Perkins and P Perkins.
Bell & Hyman £7.95. 0 7135 1322 5.
Further Pure Mathematics. By L Boslock, S Chandler and C Rowles.
Stanley Thornes £7.25. 0 85950 103 5.
Pure Mathematics for Advanced Level.
By R D Burdett and H Mulholland.
Butterworths £6.95. 0 408 70958 8.
Understanding Mechanics. By A J Saffer and D W S Thornley.
Oxford University Press £5.00. 0 19 914097 9.

Differentiation. By C T Moss and C Plumpton.
0 333 31794 7.

Integration. By C T Moss and C Plumpton.
0 333 31793 9.

Vectors. By T Beldingman, P C Chatwin and C Plumpton.
0 333 31791 2.

Curve Sketching. By H M Kenwood and C Plumpton.
0 333 34803 6.

Macmillan £1.65 each.

Perkins and Perkins may not, as yet, be names which carry the same familiarity as, say, Durrell and Robson, Quinding and Ramsay, or Borchardt and Perrot. There are other memorable combinations, but it is notable that the three pairs mentioned were all published by George Bell. Now, of course, that firm is incorporated in Bell & Hyman, and a strong mathematical tradition is being maintained.

The first part of the new advanced mathematics course by Martin and Patricia Perkins carried pupils from O level well into a sixth form programme and introduced those with different backgrounds to the higher-level work. Now Book 2 builds upon this foundation so that the whole of the mathematics and mechanics required for most A level single subject syllabuses is covered. Indeed the topics dealt with go somewhat beyond this to include some which are normally found in further mathematics syllabuses.

The same logical approach and interweaving of pure and applied mathematics that characterized Book 1 will be seen again in this complementary volume. Similarly, in the work from Stanley Thornes (Incidentally, another publisher whose mathematics list is of a high order) the pattern which proved successful in the authors' "core" book is pursued to complete a full two-year course in keeping with the current syllabus. DeBundy and Mr Mulholland have revised their 15-year-old text in the light of the new syllabus, with the common core again prominent. The extra pure mathematics "syllabuses" which are equivalent to that of the JMB's Pure Mathematics 1 is also covered.

Matching this is the new Oxford book with a title presumably chosen in an endeavour to be different from the many others parading the same ground. The mechanics is that of the A level single subject Pure and Applied Mathematics. The authors have a good point when they aver that many pupils find difficulty in drawing a simple neat diagram, often an essential start to the solution of an applied mathematics problem. They therefore demonstrate the technique in exercises and examples. A local text and many sets of questions, including a lavish selection from past examination papers, make the whole a most acceptable work.

The concept of the core recurs in a new series from Macmillan. Here are shortish books (between about 60 and 90 pages in length) each on a topic central to the study of Advanced level mathematics; they form small core studies of their own while together they deal with the main areas of a typical single-subject A level syllabus.

The authors, well-known and experienced teachers, can be adapted flexibly for revision, to supplement a full-length textbook or, collectively, as a complete course. The emphasis is, unreservedly, on achieving examination success. There are no frills, but honest, straightforward, presentation of the essential theory associated with guidance on answering A level questions. To judge on the contents of the initial four books, a gap in the market has been found, and adequately filled.

F. W. K.

BOOKS

Supply and demand

Casebooks on Economic Principles: Consumption and Production; Government and Markets; International Economics. By Andrew Leake.
Macmillan Education £1.50 each.

Should R N Salaman's *The History and Social Influence of the Potato* be at every economics teacher's elbow? Maurice Willatt thought so, and his influence on a generation of economics teachers is exemplified in Leake's casebooks, which reveal in such esoteric sources.

As stated in the review of the first three casebooks (*TES*, January 21), each case contains an outline of the general principles involved, illustrations of how they apply in the real world, and questions based on the issues raised, with answers provided at the back. Leake blends a sharp intellectual edge with an amusing, humane style to provide some quite fascinating exercises. It does not matter that his extracts are not from very recent sources. What is important is that they directly illustrate economic principles. Wherever possible, straightforward supply and demand analysis is used to explain relationships.

All the casebooks are attractively presented, and ought to be indispensable to the A level economics teacher. Leake's eclectic collection of examples fills several notable gaps where conventional theory often lacks practical illustration - for example, on fixed and variable costs he provides hourly fixed and running costs for a tractor at three levels of use. On efficiency he uses a

case which shows that a horse-draw is more efficient than a lorry for short-distance beer deliveries.

His researched examples include an interview with Frederick the Great in 1772 on fair taxation, Thomas Tooke on free trade in 1820, Fanny Cradock in *The Daily Telegraph Cook Book*, and Heath Robinson's egg armour plating machine. The pig cycle is often quoted when the cobweb theorem is taught, but Leake actually provides the 1930s statistics from Ireland together with an explanatory graph. Public sector pricing is brilliantly treated, and includes a piece about the pricing policy of British Rail which suggests that "an undergraduate Senior Citizen travelling off-peak on a Thursday Awayday excursion cannot only take his bike with him free but may end up being owed money by the ticket office".

International Economics is rather more taxing than the other two casebooks, and is more suitable for the abler sixth former. As in all the series, Leake provides unusual and original graphical analysis, and his questions demand serious thought. A refreshing example is provided under "trade due to a comparative advantage in production". "Suppose that one girl is better at maths homework, and the other is better at physics..."

This series provides some of the best new material for economics teachers for several years, and the combination of lively examples and intellectual curiosity is most attractive.

David J Whitehead

Warp and woof

The Weaving, Spinning, and Dyeing Book. By Rachel Brown. Revised Edition.
Routledge & Kegan Paul £9.75. 0 7100 8985 6.

Rachel Brown, American author of *The Weaving, Spinning, and Dyeing Book* is of that delightful breed of enthusiasts who enjoy sharing their skill and knowledge with others. Her style is friendly and her instructions are made easy to follow by the inclusion of

appropriately placed clear diagrams. The first eight chapters deal with all aspects of weaving. Spinning and dyeing follow, the dyes mentioned being both natural and acid. This section contains useful recipes.

Help with selling, either directly or wholesale, includes legal advice for the British reader. There is a glossary and a list of suppliers on both sides of the Atlantic. This modestly priced book would be valuable for aspiring weavers.

Betty Tadman

shmp 7-13

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F. W. Kellaway

BOOKS

Happy ever after

The loner, the misunderstood, the out of step, the wif in the cold, the solitary seeker for friends: Lucy Gray, the Ugly Duckling, Cinderella, the Little Match Girl - what child does not feel instant rapport with any of these? More childhood heroes and heroines than you would think are of this kind; most leads in fairy tale, all those solitary nursery rhyme characters. What these early tales and rhymes and ditties most valuably bring is the first apprehension of grief, the exquisite pang which increases the joy of the close; the lost thing found, the home, the friend. All the picture books below (though lightly in some cases) are in this category.

Rosetta by Jennette Besançon Flot (Abelard £4.95) tells of a little donkey, born under the last rays of sunset, which turn his coat from grey to a fiery red - thus his name. Despised by the village folk for being different he is sold into miserable servitude, until a perceptive little girl Sophia acquires him (read how) and happiness comes at last. A charming little theme song (sung to Rosetta first by his mother, then by Sophia) is given, with the music. This is a really beautiful book. Dorothea Duntze's luminous paintings, combining quiet detail and haunting effects of distance, should touch the imagination of very young children as well as of adult appraisers.

Life seen on a tiny scale (one of the

secrets of Andersen's magic) gives a special appeal to Little Man Finds a Home by Max Velthuis (Abelard £4.95). "There was once a tiny little man who lived in an old cardboard shoe box. He was happy there." The picture shows the box with grass and flowers growing around like trees. But it collapses in the rain. So to the search for a new home: up in a tree with birds; in a rabbit warren (rosy but overcrowded); other hopeful tries. When he finds a house he invites all the helpful animals to a feast. For any young child this delightful book, with its bright expressive childlike pictures, could hardly be bettered.

Brunus, the mournful teddy bear hero (or anti-hero) of Ellen Bell Walsh's Brunus and the New Bear (Hodder £4.50) has been boy Benjamin's close companion since both were new. Yet now all Ben's attention seems to go to his tiny new teddy bear. How we feel for Brunus when he tries to hide the little interloper under the mottled Benjamin's sees and understands. A sympathetic tale; something like this happens too when a new baby arrives. The clear and simple pictures use a range of teddy bear colours (brownish, biscuit, tawny orange, light blue-grey) on a sand-hued page.

Orville's Outing by Bonnie Timmons (Cape £4.95) has that special

kind of guileless simplicity which so rarely conceals a highly sophisticated wit. The effect, as here, can be once funny and poignant. Orville, a sort of largish almost human bird, decides to leave his pleasant tree house and go forth to see the world. But everywhere he is mocked - and in most unmanly fashion. "He thought he would burst, he was so sad and lonely." Yet wait! When he starts to sing of his grief all's changed. They flock to him. He's a genius! Well, that's how the story goes. What carries it all along are the pictures: in their soft, wistful line, light wash, white ground, no emotions can be blurred, misread, concealed.

Poor Esme by Victoria Chess (Dorland £4.50) is about poor Esme, a scowling, desperate seven-year-old (I count the candles on her lonely cake). Everyone's too busy to play with her. Mum is busy with dad, dad with mum. The twins play with each other. From the library she gets a book on owls. But be careful what you wish! This is a gorgeous book. The pictures, for all their meticulous line and watercolour, are madly funny and undeniably wise. (Note too the anxious faces of Esme's large family of toys.) Yet their colour and design make them a pleasure in themselves. As a handbook on the dangers of careless wishing this is also not to be missed.

Naomi Lewis

Drops of inspiration

Three Tales. By Robert Nye. Hamish Hamilton £6.50. 0 241 11085 8.

These recastings of old tales have no poetic intensity which sets them apart in an area of writing which is often dull and ineffectual. They are fluid, alert, inventive; and for all their sense of fun they never give their sources. Nye sometimes goes into whimsy - for instance the King and Queen's unrelieved diet of kippers and strawberry ice-cream in "Wishing Gold" - but generally his adornments have both point and force. He can elaborate a hint in his sources with tact and daring: the simple life in Charlotte Guest's translation of the early Welsh Taliesin story, "the foresaw everything that was to come", expands in Nye's version into a detailed description of the poet's estate: prophetic trance, remarkable for its beauty, clarity and simplicity. Nye also enjoys the comic element of the story. So, for instance, the youthful Taliesin's lack of making King Maelgwn's bard incapable of saying anything but "blerwm, blerwm". This

attempts to add such comic touches to the essentially sombre "Wishing Gold" and "Beowulf" are rarely happy.

All three stories were previously published separately; this omnibus edition strips them of their illustrations, leaving the focus where it should be, on Nye's sinuous, supple prose. The title of "Taliesin" a fifth chapter might have served for the collection: "The Three Drops of Inspiration". Nye is intoxicated with language; something of his pure pursuit in words must transmit itself to the reader. Here is Maelgwn slandering Elphin's wife, with a bribe which brings their argument about whose spouse is more virtuous to life in a way which a more moderate writer might labour for pages to achieve: "Be sure then, bird-broiled nephew, that your wife is a slut, a flirt, a minx, a miss, a trash, a scold, a snotty-nosed baggage, a crab, an eyesore, a misery, a drunkard".

"Wishing Gold" is an Irish folktale of the "Water of Life" type which modulates into a sort of fairytale version of the Grail quest; it is full of

piercing images, but over-rich "Beowulf" (originally "Beowulf") is an astounding re-creation of the Anglo-Saxon poem. In its representation of feelings it is unerring; in its extrapolation of moral truth it is preciously simplistic. Halfway through the powerfully conceived and savagely couched struggle between Beowulf and Grendel's mother, for instance, Beowulf delivers a little homily on the virtue which he has just displayed: the tension, nevertheless, of this is the most striking and moving episode in any of the stories; instinct with the terror of uncontrolled emotion. Beowulf sinks through "the sucking, obscuring embrace which offers a passive violence more terrible than any martial threat. Beowulf overcomes this grotesque embodiment of smothering materialism by asserting his independent self; he is a man, a hero, a man of stoutheaded mother sleeps. And Beowulf strangles her, "with a stroking stroke that was nearly pity".

Neil Philip

The right track

The Great Railway Adventure. By Christopher Portway. Oxford Illustrated Press £7.95. 0 902280 97 X.

It is only since trains have been threatened with extinction that books on railway journeys are becoming fashionable - or so it seems.

Christopher Portway's is an exception because he has been devoted to this mode of travel since the second world war. As a result, his account of the fabulous Orient Express refers not only to the emasculated super-luxurious 1960s version, but to the real thing.

As well as this famous train, Mr Portway has travelled on pretty well all the really outstanding lines. He has crossed the Andes, the Urals, North Africa, Pakistan and even Abkhaz to name but a few. Not only did he go to USSR with an inadequate visa to the first place, but succeeded in getting as far as Vladivostok - 500 miles beyond Khabarovsk, the usual limit allowed for foreigners.

There, he looked upon the Pacific ocean 8,000 miles from home reached entirely by train, "except for the English Channel - not much larger than some of the Siberian rivers." Vladivostok he discovered to be "exceedingly awful" and the Pacific "brown and lifeless" but "my dismal

little excursion had not been wasted". He managed to evade the close questioning of the Intourist guide about his 36 hour absence, even though he fortunately jumped to the wrong but obvious conclusion and wanted to know her name! Samarkand, which he took in on his return journey, only merits a paragraph. It did not rate, one feels, because he was obliged to get to it by air; Intourist deemed it so.

Unlike most modern travel writers, Mr Portway actually chooses, not to say reveals in, discomfort. Who else would spend "a sickening 14 hours standing with three dozen others in a compressed gel of sweaty undean humanity in a compartment meant for eight"? That was in the "bottom class" in India. "In the morning, at New Delhi station, I watched them sweep out a corpse with the rubbish from my coach. I can't say, in all honesty, I felt much better myself." And then there was the time in Ecuador when they ran out of petrol in a tunnel and the nanny goat was sick on his sandals.

Mr Portway's enthusiasm for railways has also brought him close to great danger. He was on the last train out of Uganda before the hideous regime of Idi Amin closed the border with Kenya.

Diane Spencer



"Take a large olive, slice it and stuff it with a paste made of anchovies, capers, and oil. Put the olive in a saucepan and boned beefsteak. Put the beefsteak inside a boned hen. Put the hen inside a boned ham. Put the ham inside a boned pig. Put the pig inside a boned cow. Put the cow inside a boned man. Put the man inside a boned world." - excerpt from "A Dish for a Poet" which finds a place in The Oxford Book of Christmas Poems, ed. by Michael Harrison and Christopher Stuart-Clark (Oxford University Press £6.95).

RESOURCES

CABLE in the community

In the second of two articles on cable television, Peter Turner looks at its future role in community education

In some areas of the country cable may offer local education authorities an exciting new opportunity to extend community education - without a significant increase in financial expenditure. Despite the lack of Government encouragement, several of the franchise applicants have approached I.C.A.s, universities and colleges offering a "free" channel in return for an education service. Clearly, if such a channel were confined to the circulation of materials for viewing in schools, it would be of limited value. Instead, it should be recognized as the first new opportunity since the establishment of public libraries for I.C.A.s to become involved in home-based educational provision.

This does not mean that I.C.A.s should emulate the activities of the Open University or the Open Tech. An educational channel on a local cable service should be seen as an opportunity to extend the existing adult education service into the home. Programmes could be prepared to introduce classes to a new audience.

In any area there is a significant section of the community not reached by the evening institute provision. Frequently, despite publicity in the local press, people remain unaware of the range of subjects provided or they lack the motivation to undertake the study of a new subject. The cable channel could stimulate interest and attract a new audience into the existing evening classes.

In addition, there may be people who would welcome classes but who are prevented from attending local centres because of infirmity, domestic responsibility or a lack of transport. The cable channel could bring the classes into their homes and help them to feel that they are able to participate in community activities.

It seems likely that the educational channel will have a changing audience. At the start of the day programmes could provide pre-school education not only for viewing in the home but also as a service for playgroups and nursery schools.

Later in the morning the channel could usefully direct its attention to the interests of the adult community who work unusual hours or are without paid employment. This might include special educational programmes for



the retired seeking new outlets for their energies.

After lunch, although programmes would still be directed at the general adult audience, there could be an increased concentration upon women's activities and interests. Features could be included to assist women who were anxious to prepare themselves for a return to paid employment.

At the end of the school day programmes could provide additional learning support for pupils needing extra attention. In some cases, this might include help with examination preparation. If the broadcasting organizations proved cooperative, it would be an excellent opportunity to replay outstanding programmes from the BBC and IBA schools services. (It would provide a second chance for those who didn't see the programmes in lessons and revision for those who did.)

During the evening, community information, DIY and life skills programmes could be used for family viewing. These could be followed by

videos of social, educational and leisure activities in the area. Here, the objective would be to provide a sample and encourage the viewer to take part in the classes, clubs and associations featured.

Almost all the programme ideas suggested would need to be produced on location using the "Electronic News Gathering" techniques recently introduced into broadcasting.

This means that an educational channel would not need a permanent studio but only a base for programme editing. The programmes would be made using portable U-matic video equipment with a small team under the direction of a teacher/producer. As the programme making costs should be low, local sponsorship could probably be used to support the extra service.

Unfortunately not all the homes within a locality will have access to the cable system. The majority of I.C.A.s cover a much larger area than the cable franchise and within the area of the cable system many ratepayers may decide not to subscribe to the cable company. These residents could be offered the same materials through cassette distribution via their local library. This could be provided without a significant increase in the cost of the service.

In many authorities the production facilities to make the required materials already exist in local colleges. Also the increased demand should encourage the development of a mixture of the programmes produced by I.C.A.s, universities and colleges. Indeed, it has been the lack of an "honest broker" that has prevented greater exchange of materials in the past.

Once a market for educational programmes of this type is established, the demand will continue to grow with the expansion of cable and cassette. This should place British programme makers in a good position to take advantage of the growing world market for television products.

If it is true that information services will be central to a new industrial revolution, then cable should be welcomed by all in the education service. In due course it should provide a significant new source of income for the educational service and new job opportunities for members of the teaching profession.

Grand pop?

The Great Composers and Their Music (Partwork series from Marshall Cavendish £2.75 fortnightly).

Some might cavil at the aggressive, down-market advertising - television commercials selling Beethoven like soap powder - but Marshall Cavendish's new partwork series *The Great Composers and Their Music* is a notable attempt to introduce the classical repertoire to a non-specialist audience. In 52 fortnightly issues comprising an LP or cassette and 24-page booklet, it will cover the major works of some 36 composers ranging from Handel and Vivaldi to Getz and Stravinsky.

An additional 13-part section to be issued after the completion of the main series (i.e. sometime in 1985) will focus on "The Great Age of Opera" with extracts from 22 works composed between 1786 ("The Marriage of Figaro") and 1951 ("Billy Budd").

Unashamedly populist in that it assumes no prior musical knowledge, the series is nevertheless produced to the highest standards. Its consultant editors include Antony Hopkins and music examiner Christopher Headington. The recordings used are from the catalogues of Deutsche Grammophon, Philips and Decca, and whilst most are now rather elderly (the recording of Brahms' Symphony No. 1 in Issue Two dates from 1960) they are stereophonic and feature artists and orchestras of the highest calibre.

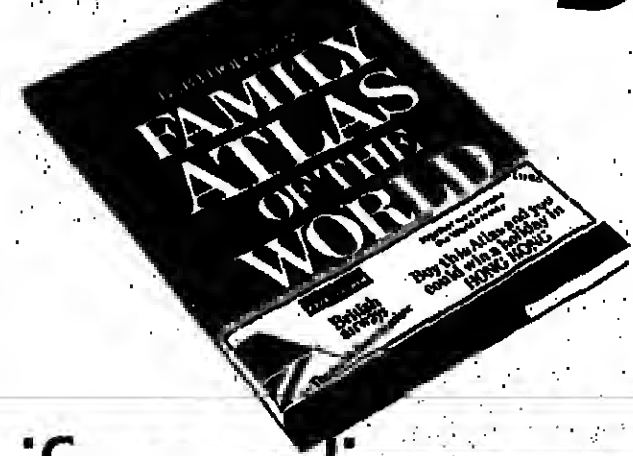
Beethoven's Symphony No. 5 is the subject of the first issue and the featured recording that of Karl Bohm and the Vienna Philharmonic Orchestra. Coming issues feature Herbert von Karajan (again with the V.P.O.), Colin Davis, Claudio Arrau and a brilliant Chopin recital by Tamas Vasary.

The accompanying booklets are also beautifully produced. Illustrated in colour throughout, they each contain a detailed "Listener's Guide" to the recorded work, a biographical sketch of its composer and background articles setting the work in context and explaining such topics as "What is a Symphony?". Useful for students at O and even A level as well as appealing to the general listener/reader, the series comes complete with the usual introductory offers for binders and in this case matching cassette racks and record boxes.

At £2.75 it is outstanding value for the recordings alone - the cassettes might even find an unexpected market among the growing number of people who travel to the accompaniment of music from a back-pocket personal stereo.

Hugh David

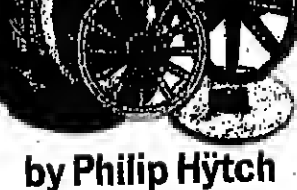
Family Reading



if you live on Planet Earth

Price £11.95 Available from W H Smith, John Manziar and good bookshops. John Bartholomew & Son Ltd, Duncan Street, Edinburgh Tel: 031-867 9341

Moving around



by Philip Hytch

importance, and Doug Kincaid and Roy Richards must be congratulated on their choice of content material. The concepts introduced and developed in the two packs relate to the overarching concept of Energy, and those familiar with Science 513 will recognize the logical way in which the content flows from a clear conceptual structure.

"On the Move" is divided into two halves. Animals Moving introduces pupils to a range of interesting and worthwhile topics, providing simple opportunities for observation, record-keeping, hypothesizing and testing. It includes some of the most fascinating

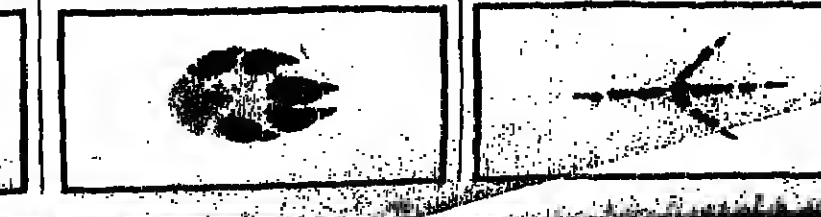
and inventive activities I have seen, albeit with commonplace and reasonably accessible equipment. I recall particularly the very nice behaviour studies with a group of woodlice, and the ingenious suggestion that the pupils might try to "charm" a worm with a recorder!

The second half, Make it, Test it, begins with some good experiments based on the standard paper dart that most of us have made at some time, and goes on progressively to deal with stabilizers and control flaps in creating more and more complex versions of the paper aircraft. Boomerangs, nurogyros, parachutes, spinning tops and boats are among the topics included, and it is impressive how many of them may be developed through the questioning of pupils and teachers as well as through the discussions that will be generated in many situations. The teachers' guide is very helpful in this. The various models are easy to con-

struct and children will undoubtedly enjoy making them, but the testing aspect is of equal importance and it is good to find children being constantly urged to "devise some fair tests".

"Moving Around" is also divided into sections, one concerning itself with Cars and Lorries, the other with topics related to Wheels. I confess to being unconvinced by the logic of this division, but the cards themselves contain exciting as well as exciting activities. The authors suggest that some ingenuity will be needed to get "gears" involved, and I do not think the feminist lobby would approve of their idea of directing the girls to the colour and design aspect of cars and lorries.

Each card is made to fold in half, creating a four paged "hook" which seems somehow more appealing than the usual worksheet format. The cards themselves are strongly constructed, with good illustrations and a clear, well-written text. There are no wasted words, and the layout is attractive, but a strong sense of purpose and down-to-earthness that will be appreciated by pupils and teachers. In all, then, two thoughtfully-constructed packs that can thoroughly be recommended.



RESOURCES/SOFTWARE

The Paraffin File
Cassette for RML 380Z and 480Z; disc for BBC Micro Models A and B, RML 380Z, RML 480Z and Apple II.

Cassette for BBC Micro Models A and B; disc for BBC Micro Models A and B, RML 380Z, and 480Z and Apple II. Price: £11.95 each.
BP Educational Service, PO Box 5, Wetherby, West Yorks LS23 7EM

The Paraffin File is a simple business game, designed for use in middle and upper secondary schools and in further education. It is most appropriate for students of business studies, economics and general studies, and may also be applicable in careers sessions. The exercise concentrates on the concept of "marketing mix", with reference to price, advertising and sales staff.

For economists, it provides a simulation of oligopoly, and the kind of competition that is likely to occur in that type of industrial structure. Like many such case studies, it provides students with the opportunity for decision-making subject to constraints

within a small group.

Each of the three terms runs a paraffin company and has to decide (for each "round") on the price it will charge, how much advertising it will buy on television, in the press and at point of sale, the number of sales staff it will employ, and whether to undertake market research. Students' briefing sheets provide information about how revenue and costs are calculated, and the profit and loss account for the preceding year. Four decision rounds are estimated to take about two-and-a-half hours, though additional time must be allowed for the debriefing session. Useful notes for teachers are provided by Ken Randall and M R Lynch, focusing on three aspects of the simulation. The marketing strategy appropriate for successful competition in the paraffin market is explained. Groups are asked to examine how they behaved as decision-making units. Finally, the case is compared with the real world paraffin market, and fascinating support material is provided on the history of the product, its manufacture and distribution.

While the simulation is undoubtedly

Slick work

valuable, it is questionable whether teachers will want to sacrifice some three hours of lesson time unless marketing is a central theme in their teaching syllabus. For additional studies, after school or lunch-hour voluntary activities, its use is more justifiable.

Slick! is a conservation game which focuses attention on the impact of technology on society through a case study of coastal oil pollution. It investigates the means now available to protect the environment. It may be used either by groups or individuals; separate instructions are provided.

The topic lends itself to use in a variety of contexts, from geography

and economics to chemistry and environmental science, but provides several other educational pay-offs. It requires students to solve problems on the basis of real data. Decisions must be made on the basis of a constrained range of options. It provides an introduction to logical thinking and group work, and gives younger students confidence in handling and manipulating elementary data.

The program makes good use of the BBC Model B colour potential. A map of "Northlands Bay" is screened, and after a practice run, an oil slick is caused by the holling of a tanker. Each team acts the role of the area's new pollution officer, and has to decide what methods to use to get rid of the slick. A data sheet provides information about various options, such as absorption, dispersal, short cleaning and the construction of a boom. Another sheet gives pictorial explanations of the methods. The pollution officer has to decide how to allocate his limited funds most effectively. A briefing sheet provides imaginative background detail about the tourist glories of the bay, its use as a fishing

ground, and its ornithological rarities. Teachers confronting with the mass of detailed briefing in the user's guide may be put off, but once contact is established by a few runs of the program, the relationships fall into place. Such simulations might ideally be run by a small group of interested teachers at a teachers' centre or one of their schools before using in the classroom. The tutor does need to be familiar with the game for confident class presentation and in order to decide what aspect of its many potentialities to stress.

This exercise may be used with almost any age or subject group: while the questions stay roughly the same, the answers depend on the group's sophistication or the kind of conceptual framework brought to bear on discussion. Participants are placed in a stressful situation, and the simulation illustrates how mistakes may easily be made under pressure. The value of such role-playing exercises for people who need to prepare for such discussion in real life becomes very apparent.

David J Whitehead

Obtuse angles

All the pupil does in this program is to press the space bar.

In *Angle B* the pupil answers a multiple choice test with some early frustrating questions and some later ones which again make some good use of the idea of turning.

Angle C attempts to teach about measuring angles using circular and semi-circular protractors. The superimposition of the protractor onto the angle is good but it is a pity that the idea of movement is lost: all the markings are shown at once rather than progressively displayed up to the required angle. The process is very repetitive and does not allow the student any control of the speed of drawing or choice of types of angle to be explained.

to the definitions of obtuse, acute

and reflex angles, one of the obtuse angles is very close to a right angle. On a black and white monitor, some of the diagrams are too faint to be seen because of an unfortunate choice of colours.

This is also true of *Angle D* where the pupil has to measure an angle on the screen. This is a difficult process and there is a reasonable allowance for error. It is a pity that the exercise did not concentrate more on the rough side of the angle, which is where most pupils have difficulty, rather than on the finer measurements. A useful aspect of these programs is the emphasis on turning, which could help pupils who have difficulty with more static approach to measuring angles.

Sequences offers the choice of seven number sequences: halving, fibbonaci,

ci, prime numbers, square numbers, triangular numbers, multiples of three and multiples of nine. Throughout the pupil only presses the space bar. In the explanation of such a simple idea as the multiples of three, it is claimed that the digits of numbers which are multiples of three sum to 3, 6, 9 or 12. This feature is then used to show that 546 is a multiple of three because its digits sum to 15.

Chalksoft would help their credibility, and that of CAL in general, by withdrawing this program.

Metrics is claimed to be a set of five programs giving practice in the vocabulary and structure of the metric system: mass, capacity, length, area and volume. Questions are in multiple choice format and the user has to answer correctly before moving on.

As all schools have the quizzing programs supplied by the MEP Microprimer pack it is hard to see why they should pay £9.95 for 100 pretty dubious multiple choice questions. The pupils would gain more by making up their own tests than by being conditioned to provide the answers expected by this exercise.

Most of these programs are marred by dreadful noises and semi-musical jingles and sections of programs are introduced by pointless graphics accompanied by pseudo tunes. No instructions are given to help the novice user remove these unwanted intrusions.

The programs were very tedious to load. What was particularly frustrating was the need to alter the volume and tone controls between programs. Many primary teachers will be put off using computers if such leading programs make the use of the computer attractive only to the experienced few.

Paul McGee

bits

ADDITIONAL SOFTWARE

Griffin & George enter the home computer market this week with "Griffin Software". Six educational programs in maths and English for 4 to 9-year-olds are initially available for the Sinclair Spectrum (48K) and the BBC Model B. The first four are in high street stores, priced £7.99 (Spectrum), £9.95 (BBC). Shiva Publishing are also moving into educational software with their "First Maths Programme" for 5 to 8-year-olds. Four are now available for the BBC Model B, £14.95 each from Shiva Publishing Ltd, 4 Church Lane, Nantwich, Cheshire CW5 5RQ (tel 0270-628272).

chalksoft

BBC Educational Software is NOW AVAILABLE ON DISC

Just add £3 to the cassette price. Order in the usual way from:

BBC Educational Software
Ward Lock Educational Co Ltd
47 Marlborough Lane
London W1N 6AA. Tel: 01-466 3271
Discs produced by COPYCAT

SPECTRUM EDUCATION

Educational software designed by Teachers for Teachers

TYRANT PACKAGE (48K): £9.95
A 4-level program - Tyrant Simulation. It contains 4 levels of difficulty and 4 levels of challenge. Includes a 4-level challenge scheme. Complete with 4-level challenge scheme.

COUNTDOWN (48K): £9.95
A 4-level program - Countdown. Includes a 4-level challenge scheme. Complete with 4-level challenge scheme.

WIRE (48K): £9.95
A 4-level program - Wire. Includes a 4-level challenge scheme. Complete with 4-level challenge scheme.

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Key to the box

Black Box Technology
Two-disc package for the RML 380Z plus 5600 teaching notes. Price £40 plus VAT from Heinemann/Five Ways, 22 Bedford Square, London WC1B 3HT.

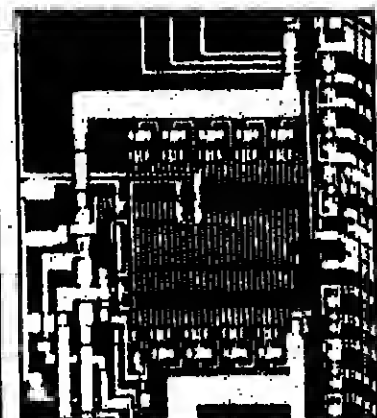
Among the very latest offerings from the Heinemann/Five Ways coalition comes **Black Box Technology**. This piece of computer software is, according to the sales information, "another highly sophisticated program to introduce students to the operation of logic circuits". To the best of my knowledge it is the first program designed to do this in an educational environment. The extent to which it will be successful is another matter.

The program itself emulates the wiring process on the screen. To this end six "logic blocks" or elements are displayed, the function of each to be defined by the user as being one of a fixed list of gates, other useful elements such as seven segment displays, counters, half adders, etc or the entire contents of another screen that the user has defined. Each of the blocks has a maximum of four inputs and outputs and to the left of the screen four inputs complement four outputs on the right.

Once a gate has been selected wires can be connected to it by fixing one end of an "elastic" wire and driving the other end around the screen with some logical (but all too often hard to find) keys "V" for up, a nearer implementation would be four keys in a cursor control block and the two start and end keys arranged for ease of operation.

One of the good features of the program is its ability to spot misconnections so two outputs cannot be connected together at the wiring stage. This has the drawback, however, that it is not possible to use "wired OR", so another logic element has to be used.

With only six blocks this can lead to a shortage of logic blocks and even specs, although only slight if the system is used in secondary school work.



by Mike Sharp

limited input pads for a static role. Having set up a circuit on the screen, the "user" can test it by setting up a series of input states on a sort of conveyor which places the nibbles of information one after the other on to the four input pads. The states of all wires connected to these pads or via the logic elements to anywhere else on the screen, then change according to the "logic" of the circuit, the actual state of each wire being indicated by its colour.

This colour can be used in monochrome so you won't need a colour screen. The input states conveyor can be set to run automatically or the input states can be stepped through one at a time. If during this phase the program detects an unstable section of the circuit, it flashes the connections concerned and displays a message to the effect that the circuit is "hung up".

Once the circuit has been designed and tested it can then be saved on a disc either for use as part of a larger circuit or as a complete entity on its own.

However, the nesting of complete screens, part of further circuits is only one deep. This is a limitation, although only slight if the system is used in secondary school work.

times during operation of the package, comprehensive and effective help can be summoned by hitting the "H" key.

Package of the documentation is complete in every detail of the system's operation. It does not, however, give many hints on the ways in which the system may be used. Heinemann claim this is to allow the teacher maximum freedom, but finding the more interesting applications of the system in the classroom is going to be tough for most teachers. There are, however, a number of interesting circuits on the data disc which provide some small insights into the package for the newcomer.

Apart from the problems above, only two further points came up during the evaluation phase. Firstly, Heinemann/Five Ways are the only people from whom data discs can be purchased, so once the disc in the package is full, there is a monopoly situation in obtaining fresh discs. Secondly, while the primary aim of the system is not to be a working digital system, it seems obvious that the four inputs and outputs could be copied to the userport, which would allow use of the package as a true logic processing system in a larger control environment.

Use of the package in the classroom is going to be more as a demonstration device than a pupil-used device. This is because there seems to be no intention to implement it on the RML network, so groups of pupils will find trouble in using it. As a development tool for upper school A level electronics, physics or computing student, the package provides a powerful and speedy way to breadboard and test digital systems.

As a tool for INSET of teachers the package complements the commercial "logic tutor" approach well and if used in conjunction with some well thought-out teaching materials, will prove to be more than worth the investment in hardware and software required.

Although there are some problems, this package is without doubt the first piece of true computer aided design software to arrive on the education market.

Clued up

Hunt the Thimble
Available for BBC, Apple and Pet computers.
Cliff Microcomputer Software
£17.50.

As many teachers have discovered, a substantial proportion of so-called "educational" tapes offer nothing new, are poor in presentation, and do things which could be far more effectively done with a piece of chalk. *Hunt the Thimble* is a welcome exception to the rule. It is a simulation for use by top infants, and aims to introduce children to simple decision-making.

A thimble is missing in a two-storey house concealed randomly by the computer; children working in pairs or small groups compete with each other, taking turns to hunt for it. The group must first decide on which floor they will conduct the search, and then the room. The traditional clues of "cold", "warm", "warmer" and "hot" are used. On selecting the correct room they will be informed that they are getting warmer. They must then identify the correct piece of furniture, and search under, over or in it. Impractical or dangerous searches are catered for: for example they receive the message "Danger! Can you search here?"

The program presented no problems to the pupils on whom it was tested: indeed, the discussions between the pupils as they pored over the clues and awaited their turn were not only evidence of their enthusiasm, but also provided the teacher with a considerable amount of useful follow-up material.

Hunt the Thimble is the creation of Barry Holmes and Ian Whittington, who also designed *Mary Rose*, enthusiastically reviewed earlier this year. Both are head teachers of junior schools, and are particularly anxious to use microcomputers as just another tool alongside others. This down-to-earth approach is reflected in the quality of their program.

Robert Leggett

briefings
radio & tv

For schools

LIFETIME

(Monday-Friday 00.30, VHF4)

NB

The first ten programmes of dramas illustrating the problems faced by teenagers today. Links with the SCHEP material and provokes discussion among 13 to 17-year-olds on the home background and school problems.

TOMORROW'S PEOPLE

(Wednesday 9.47)

Thursday 10.16, ITV)

"What is marriage?" In an effort to foster racial harmony, 12 to 14-year-olds learn that although marriage ceremonies differ from community to community, they all join a man and a woman in a partnership for life.

NATURE

(Wednesday 14.45, VHF4)

The unit about "British Mammals" begins with a radiovision programme for 8 to 10-year-olds on the way animals live in a wildlife sanctuary and a zoo.

EXPERIMENT: BIOLOGY

(Friday 9.30, ITV)

How is energy regenerated? A level students study the cardiovascular and respiratory systems.

ENGLISH FILE

(Friday 14.30, BBC2)

Ron Smedley's excellent production of Priestley's "An Inspector Calls" is shown in three parts for 14 to 17-year-olds.

Work and training

GOING TO WORK

(Monday 9.38, Friday 11.44, BBC2)

A new play "Union Matters" by Bill Lyons centres on a dispute over working conditions at a large hotel. A new employee is under pressure to join the union.

WAVELENGTH

(Thursday 11.30, VHF4)

This magazine programme for teenagers, introduced by Andy Peebles, presents a second report on the YTS.

THE TRAINING REVOLUTION

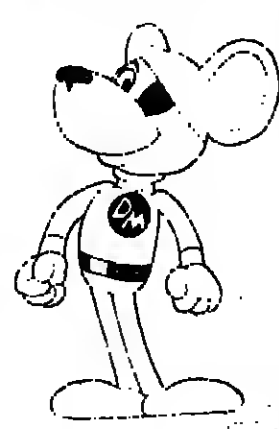
(Sunday 16.00, Friday 23.30, VHF4)

Investigates retraining prospects for young people and adults.

MEDIA

Tots tops

In his second article on children's television, Hugh David looks at ITV



Stephen Leamy, Head of Children's Programmes at Granada Television, arrived at the foot of the mountain of criticism established by a few runs of the program, the relationships fall into place. Such simulations might ideally be run by a small group of interested teachers at a teachers' centre or one of their schools before using in the classroom. The tutor does need to be familiar with the game for confident class presentation and in order to decide what aspect of its many potentialities to stress.

Previously, as Stephen Leamy freely admits, their children's output was "getting walked" by the BBC. The answers depend on the group's sophistication or the kind of conceptual framework brought to bear on discussion. Participants are placed in a stressful situation, and the simulation illustrates how mistakes may easily be made under pressure. The value of such role-playing exercises for people who need to prepare for such discussion in real life becomes very apparent.

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Health matters

The second programme, "Keep Fit", makes use of the device of a family trip to a local castle in order to put over a mass of information obviously thought to be unpalatable in its raw form. I remained quite unconvinced that this was a real situation, and was in fact irritated by the contrived nature of the whole affair.

I think that here the BBC has misjudged the sophistication of its audience. The "voice from the past" delivering dollops of historical fact and anecdote is another device much used in school broadcasts, but in this case it serves, if anything, to diminish further the sense of reality that author Edward Kelley is at pains to create.

After this rather unpromising start, it is good to report that the programme improves markedly. "Unholy Smoke", which opens with a very impressive sound picture of an erupting volcano, really gets to grips with pollution and its sources, one of the important themes of the "My Body" project.

We are presented with some very straightforward factual information which is pointedly illustrated by pic-

tures and appropriate statistics. There is a nice sequence in which a woman describes how she went about the business of lighting the fire each morning, reminding us that to many of today's children this is now very much a matter of history. The way in which "acid rain" poses a threat to plant life as well as to buildings comes over very dramatically.

The last programme in the series, "The Discovery of Vaccine", is for me the best, and provides an example of what sound broadcasts can do really well - the dramatized documentary. The story of vaccination is an exciting one and simply needs to be recounted with as much attention to historical accuracy as possible in the time available. The result in this case is a gripping programme in which the medical information comes over very clearly indeed, as does the atmosphere of the period.

That is not to say that there are no flaws, but that these are ones that probably go over the heads of most of the children listening.

Philip Hytch



PRIMARY HEADSHIPS

BALING
LONDON BOROUGH OF BROMLEY
SOUTHVIEW PRIMARY SCHOOL
SOUTHVIEW ROAD, BROMLEY
Group 4
Age Range 5-11
This is a full range primary school with a nursery unit. The school is situated in a pleasant area and is the first of its kind in the County.
Full details and application forms from the Director of Education, Bromley, 100, Southview Road, Bromley, SE18 3LJ. Tel: 0181 851 1010. Closing date 18 November 1983.

HERTFORDSHIRE

HOMERSWOOD J.M.I. SCHOOL
HOMERSWOOD, WATFORD
Group 4
This is a full range primary school with a nursery unit. The school is situated in a pleasant area and is the first of its kind in the County.
Full details and application forms from the Director of Education, Hertfordshire, 100, Watford Road, Watford, WD17 1JL. Tel: 0181 851 1010. Closing date 18 November 1983.

HAMPSHIRE

WESTERN DOWNLAND C.E. AIDED PRIMARY SCHOOL
BROOKLANDS, N. HAMPSHIRE
Group 2
Age Range 5-11
This is a full range primary school with a nursery unit. The school is situated in a pleasant area and is the first of its kind in the County.
Full details and application forms from the Director of Education, Hampshire, 100, Brooklands Road, Brooklands, GU24 0JL. Tel: 0181 851 1010. Closing date 18 November 1983.

HAMPSHIRE

FARNBOROUGH ORANGE COUNTY JUNIOR SCHOOL
FARNBOROUGH, HAMPSHIRE
Group 3
Age Range 5-11
This is a full range primary school with a nursery unit. The school is situated in a pleasant area and is the first of its kind in the County.
Full details and application forms from the Director of Education, Hampshire, 100, Farnborough Road, Farnborough, GU14 7JL. Tel: 0181 851 1010. Closing date 18 November 1983.

HILLINGDON

LONDON BOROUGH OF HILLINGDON
HAREFIELD JUNIOR SCHOOL
HAREFIELD, HILLINGDON
Group 3
Age Range 5-11
This is a full range primary school with a nursery unit. The school is situated in a pleasant area and is the first of its kind in the County.
Full details and application forms from the Director of Education, Hillingdon, 100, Harefield Road, Harefield, UB8 3JL. Tel: 0181 851 1010. Closing date 18 November 1983.

KENT

COUNTY COUNCIL EDUCATION DEPARTMENT
SHEPHERD ROAD, LYD
Group 4
Age Range 5-11
This is a full range primary school with a nursery unit. The school is situated in a pleasant area and is the first of its kind in the County.
Full details and application forms from the Director of Education, Kent, 100, Shepherd Road, Lyd, ME11 8JL. Tel: 0181 851 1010. Closing date 18 November 1983.

WEST GLAMORGAN

DEPUTY HEADSHIPS
Second Masters/Mistresses
This is a full range primary school with a nursery unit. The school is situated in a pleasant area and is the first of its kind in the County.
Full details and application forms from the Director of Education, West Glamorgan, 100, West Glamorgan Road, West Glamorgan, GL10 1JL. Tel: 0181 851 1010. Closing date 18 November 1983.

AVON COUNTY

WYCHWOOD INFANTS' SCHOOL
WYCHWOOD, GLOUCESTERSHIRE
Group 4
Age Range 5-11
This is a full range primary school with a nursery unit. The school is situated in a pleasant area and is the first of its kind in the County.
Full details and application forms from the Director of Education, Avon, 100, Wyckwood Road, Wyckwood, GL10 1JL. Tel: 0181 851 1010. Closing date 18 November 1983.

BRENT

LONDON BOROUGH OF BRENT
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Full details and application forms from the Director of Education, Brent, 100, Oakton Manor Road, Oakton Manor, WU2 1JL. Tel: 0181 851 1010. Closing date 18 November 1983.

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MILTON KEYNES AREA
SHEPHERD ROAD, LYD
Group 4
Age Range 5-11
This is a full range primary school with a nursery unit. The school is situated in a pleasant area and is the first of its kind in the County.
Full details and application forms from the Director of Education, Buckinghamshire, 100, Shepherd Road, Lyd, ME11 8JL. Tel: 0181 851 1010. Closing date 18 November 1983.

NORFOLK HEADS

DEPUTY HEAD
required for
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RUNCTON HOLME Voluntary Aided PRIMARY SCHOOL, KING'S LYNN (Group 2). (Applicants should be in sympathy with the aims of a Church-aided school).
Application forms and details from the County Education Officer, County Hall, Martin Lane, Norwich NR1 2DL, sent on receipt of a stamped addressed foolscap envelope.

DEPUTY HEAD

BOWTHORPE CLOVER HILL C. FIRST SCHOOL (GROUP 6)
Application forms and details from the Area Education Officer, Gladstone House, 28 St. Olave Street, Norwich NR2 1TG, sent on receipt of a stamped addressed foolscap envelope.
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Post number P&M 347(e).
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Granton Road, Liverpool L5 6QW
Post number P&M 348(e).
BIRCHFIELD CP INFANTS SCHOOL
Birchfield Road, Liverpool L7 9LY
Post number P&M 345(e).
Required for 1 January 1984 or as soon as possible thereafter.
Application forms from (SAE) the Director of Education, Teaching Staff Section, 14 St. Thomas Street, Liverpool L1 8BJ. Please quote post number. To be returned by 14th November 1983.

Liverpool
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MAXWELL ROAD, POCKLINGTON, YORK
N.O.R. 53 Group 2 Age Range 5-11
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INGLEMIRE LANE,
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HULL, NORTH HUMBERSIDE
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BARNET

LONDON BOROUGH OF BARNET
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Full details and application forms from the Director of Education, Barnet, 100, Wessex Gardens, Barnet, NW4 3JL. Tel: 0181 851 1010. Closing date 18 November 1983.

POWYS

COUNTY COUNCIL EDUCATION DEPARTMENT
SUTTON HILL, FELLFORD
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SUNDERLAND

BOROUGH OF SUNDERLAND EDUCATION DEPARTMENT
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Group 4
Age Range 5-11
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Full details and application forms from the Director of Education, Sunderland, 100, Sunderland Road, Sunderland, SR1 1JL. Tel: 0181 851 1010. Closing date 18 November 1983.

Education HEADSHIPS

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Group 4.
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Application form and further details are available from the Chief Education Officer, County Hall, Bedford MK42 9AP.
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Bedfordshire
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Headteacher Group 4

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London Borough of Sutton (3040)

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DUDLEY Metropolitan Borough

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EXTRA Computers in education



Raising consciousness

If you want to assess the impact of the government's great Microelectronics Education Programme, you have to start with its history. The MEP was first announced by the Labour government in 1978 as a five year, £120 million project. But by the 1979 General Election, no government funds had been committed. The Conservatives took some time reviewing the need for the project, and finally announced a scaled-down version - £9 million over four years - in March 1980. The aims were to promote more and better software, and materials for teacher training, and curriculum development. The kick-off was immediate. By the time the DES had a director appointed and in post, it was November, and the DES, with advice from HMI and others, had spent the first £1½ million. The man they chose was Richard Fothergill, who had run Newcastle Polytechnic's Educational Development Unit. It was April 1981 before his two key lieutenants had been appointed. The decision to go regional worried a lot of experienced people. "We argued from bitter experience that it was impossible to do this in a central team - two of them teachers straight from the classroom were very over-stretched. The centre was under-resourced from the beginning," says Geoffrey Hubbard of the Council for Educational Technology. It didn't help that the people chosen were short on experience of teacher curriculum development: "They've worked 25 hours a day, and have become very good. But they've had to learn on their feet," said more than one close observer. Nor did it help that the project was based in Newcastle. The argument was that in a new technology project location didn't matter, and indeed project staff now use their microtechnology to dial up the office at all hours of the night, and even from the other side of the world, to deal with mail and messages. But that's a recent development: in the first two years there were complaints of remoteness and elusiveness. Richard Fothergill produced the MEP strategy paper in April 1981: "My Bible and I've stuck to it," he says. The country was to be divided up into regions, each covering an average of eight or nine local authorities. Each region would have a director, and information centre. Some curriculum development would be funded nationally: most would be funded through the regions. In a stop press

Software scenarios	32
Cooperation at the computer	34
Hardware developments	36
Special education	37
Mathematics and computer studies	38
ROM packs	38
Teacher training	39
Electronic field trips	40
Computers and reading	41
Girls and computing	42
Jobs for the girls	43
Screen presentation	43
Computer studies	45
Careers education	46
Programs for an in-service course	47
Assessment	48
Seymour Papert in London	49
Real world applications	60

Computer fair

The First Schools Computer Fair for Teachers will take place on Wednesday, November 9 and Thursday, November 10. It is organized by the Educational Publishers Council. The main hardware manufacturers of schools computers will be exhibiting together with a large number of software publishers. The exhibition will be opened by Mr Kenneth Baker, the Minister of State for Industry. Among new items of software which will be on the stands are Nelson's Peak Maths software which accompanies their primary mathematics scheme; a mathematics program from Hutchison called Function, which, they say, will plot any graph, solve an equation or find the area under a graph; and seven new programs from Netherland Software which are published by Cambridge University Press. Hainemann will be showing their new series of primary school software, the Dudley Programs, and there will be a range of programs for children from Arnold-Wheaton Software. The exhibition will be held at the Regent Crest Hotel, Carburton Street, London W1. Teachers will be able to try out the software and also buy directly if they wish.

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EXTRA

Software scenarios

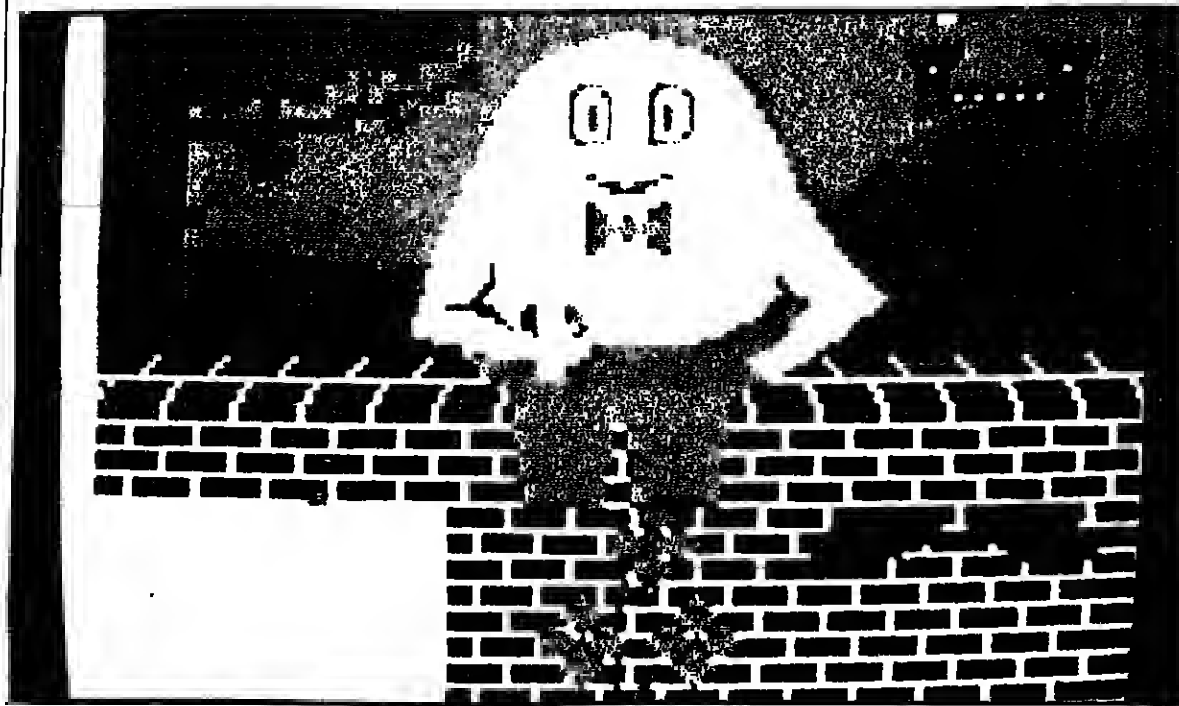


Will there or will there not be a subsidy given to schools to enable them to boost their supply of computer software? This is one question which is hard to escape in any discussion on the supply of software.

The hardware, most experts consider, is now, if not in the bag, steadily finding its way into it, thanks mainly to the Department of Industry's micro-in-schools schemes. Educational software is another and much more complex question and in the long term will be the decisive factor which determines whether computers are truly integrated into schools.

At present the main impetus for the development of software for schools is coming from the DES-funded Microelectronics Education Programme. MEP, as part of its overall strategy (reviewed by Virginia Makins on page 27) is funding, partly or completely, the four main software development units. These are ITMA (Investigations on Teaching with Microcomputers as an Aid), Chelsea College Computer in the Curriculum Project, Five Ways Software and recently Netherhall Software, based on Netherhall School. There are also a number of shorter-term projects based on schools, universities and other institutions. These include the Computer Awareness Project at Southampton University; a geography project at Loughborough University; a project on bird recognition at a Liverpool School and a special education project at the Open University.

MEP's policy on distributing the software from these projects has been mainly to arrange a deal with the commercial publishers, as Noel Whalley, MEP's Commercial Manager,



With a new entrant into the market appearing almost weekly, the number of educational software publishers is now very large indeed, including book publishers, science manufacturers as well as software houses. But can these publishers produce the kind of materials that schools want? Carolyn O'Grady looks at the relatively unexplored terrain which is the educational software market

puts it, "to bring about as many marriages as possible between provider and publisher". The best-known of these marriages are probably between Longman and Chelsea and Heinemann Computers and Five Ways. Recent betrothals have included that between Cambridge University Press and Netherhall School.

Noel Whalley is certain that the future of educational software production lies in the hands of the commercial publishers. "Software production," he says, "cannot be forever a state-subsidized exercise", and as most of MEP's pump-priming activities are likely to end in 1986 it is doubtful whether they can be. To secure the future of educational software, MEP has tried to give its production a good commercial underpinning.

Whalley uses the term "publishers" loosely to refer primarily to book publishers who are now diversifying not only into software but also into video; the new generation of companies which are devoted exclusively to software, and which include such education specialists as ASK, Garland and Chalksoft; and the hardware manufacturers, who are more and more coming to realize that their machines will only look attractive if they are accompanied by equally attractive software.

However, so far most of MEP's energies in this area have gone into directing their funded projects towards the books publishers, many of whom are beginning to appreciate that software development and distribution are more difficult and dangerous than they had thought.

Concern about the supply of computer software to schools was recently expressed in a report by the Information Technology Advisory Panel to the

continued on page 34

Raising consciousness

continued from previous page

separate from the regional centres. Inevitably there has been confusion and overlap.

Special education is organized as a separate project with four centres to cover the country. Several people told us they were "overworked" and "underfunded and overworked". The speed of development in primary schools took everyone by surprise, and this year MEP set up a national team of three, based in Winchester, to promote curriculum development material and provide training for teacher trainers.

Many people believe that national teams, working with low-cost local

moles, would have worked better all round. The total administrative cost of the 14 regional centres is about half a million pounds a year. "They've created an unnecessary tier of management, and paid for people who then have to justify their existence, and agonize over how to spend what little money is left", was a typical comment.

The policy reduced funds available for one urgent need: the production of good quality software. MEP has spent one-tenth of its funds on nationally commissioned software, mostly from four sources: the ITMA project in Plymouth, Five Ways software (which MEP helped to go commercial);

Netherhall School, Cambridge, and — by far the biggest — the old Schools Council project at Chelsea College, which MEP took over.

Most of the rest of the curriculum and software development money went through the regions: each centre has about £50,000 a year to spend on projects; £10,000 can be spent in chunks of up to £1,000 at the region's discretion, the rest are selected locally, then screened by a national committee.

There is no doubt, reading through the list of projects funded through the regions, that many look mundane and even trivial. "I've been astonished by some of the things that got grants", said one professor of education. There is interesting work in some subjects — music, for one — and a few excellent products. But all those could have been funded nationally.

The best argument for the regional policy is that even trivial projects have a value: systematically, and all over the country, people have been encouraged to experiment with the possibilities of new technology. MEP claims that the quality of proposals is now much higher, and some come from people whose first efforts were very modest.

'I've been astonished by some of the things that got grants'

The trouble is that they've run out of money to fund them. "We've £1 million worth of good projects on the shelf."

"If MEP had just funded the main software houses, it would have been dead", says John Coll, who joined the project staff this summer. "Pushing cash out through the regions encouraged ordinary people to increase their knowledge. It was no good giving stuff from the leading edge out to teachers who were out of step and out of time." Another, non-MEP, curriculum developer put it more bluntly: "We've found that the best way to raise consciousness is to throw cash at third-rate projects."

MEP have now produced 339 programs — soon it will be 500 — of widely variable quality. A frequent complaint is that the best have been distributed slowly and expensively through commercial publishers and sold at prices which, though they are heavily subsidized, schools can't afford. Fothergill says that MEP, with its short time-scale, had to encourage the production and distribution of software by every possible means — commercial publishers, telesoftware, print, under licence, and free. Now one main target for MEP's extra two years will

be to increase the volume of free software going into schools, so teachers have more evidence to judge the possibilities of computer-based learning.

On the in-service front, the semi-regional organization does not seem to have made much sense. "Far the best things have been the nationally produced materials and nationally supported projects", said one county adviser. Training materials such as INPUT for secondaries, and Micro-primer for primaries have been criticized in detail, but generally welcomed. MEP's detailed in-service guidelines are less popular: "Incredibly dictatorial", was the reaction of several CEOs and advisers.

Bill Tagg, who switched from running Hertfordshire's powerful computing effort to running MEP's Chiltern region says: "MEP have been far too centralist, laying down rules and expecting people to stick to them. They've taken an old-fashioned content-based approach: they haven't built on all the recent experience of teacher development. We've been most successful where we've broken their rules."

But for all the complaints, there's no doubt that MEP has stimulated action. "We're a lot further along than we would have been: we've doubled the number of advanced courses", said one adviser. Authorities who had no intention of appointing advisers in 1980 have been goaded to do so. Without MEP, work might have been narrowly focused on computer-based learning in many authorities, and ignored other uses of microelectronics. Teachers of computer studies have had their skills upgraded — though MEP claim little progress with updating the exam boards.

Forty-five thousand teachers have now been through MEP courses. Many others have been through i.e.s. courses based on MEP schemes and materials: "Teachers say we never see anything of MEP but our adviser is wonderful", says Fothergill. "But that adviser may be basing his work 90 per cent on MEP materials."

On the information side, spine-rattling centres were given an almost impossible task. Those in metropolitan areas could cover large numbers of teachers; in county areas, as one information officer said: "there was no way we could provide what teachers understandably demanded." Staffing varied widely depending on what i.e.s. put in.

MEP funded a team in Liverpool to make a catalogue of software that all centres could use — but inevitably there was a lot of duplication of effort on the information side. In the next two years, they hope to establish a

national database, which teachers from all over the country can both draw on, and contribute to. Meanwhile the team would argue that its centres have provided advice, access to hardware and software, and networks for teachers in slow authorities, and spread the expertise of the best.

It is too early to say whether the local authorities will keep the regional centres on when the project ends in 1986. At the moment they are engaged a poker game with the DES about who should fund them.

Fothergill's claims for progress so far are modest. "With the April '84

'We've been most successful when we've broken their rules'

deadline, all we could do was create an atmosphere, highlight leading names, set up communication systems, start lots of people talking." In its next two years the project will become much more prescriptive on the curriculum and software development front, setting guidelines and commissioning more subject-related software. "A lot of the work has been cross-fertilizing: it might have had more impact if it had been more disciplined," said Fothergill. It will also fund a serious investigation into the use of the educational programming language, LOGO.

More ambitiously, the MEP team want to feed into a national debate on the curriculum as a whole. "Unless you're blind, you can see that manufacturing, commerce, our whole way of life is changing radically. Those changes have got to be reflected in the curriculum."

One big surprise for MEP has been the keen interest in lobbying the government to set up a consultancy to export materials and expertise, and plough back the profits into further development.

No evaluation was built into the Microelectronics Development Project, and probably none is possible. Those in metropolitan areas could cover large numbers of teachers; in county areas, as one information officer said: "there was no way we could provide what teachers understandably demanded." Staffing varied widely depending on what i.e.s. put in.

MEP funded a team in Liverpool to make a catalogue of software that all centres could use — but inevitably there was a lot of duplication of effort on the information side. In the next two years, they hope to establish a

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software scenarios

continued from page 32

Cabinet, which exhorted publishers to enter for this need and also to exploit the overseas market, as UK textbooks have done.

The trouble with software, however, is that it presents entirely different development and marketing problems to textbooks, apart from the obvious difficulties of lack of money and the teachers' caution.

Roger Watson, Director of Longman's School Division and Chairman of the Educational Publishers Council's committee on software, said the actual volume of sales is still very small. This he attributes to lack of funds but also to teachers' strong and perhaps wise caution. He also points out that software is difficult to assess and to demonstrate. Unlike books, you can't browse through software.

The publishers are pinning their hopes on a government subsidy to schools to break the deadlock. Another pump-priming operation — the figure generally used is about £200 to each school — they say, would ensure that there is a reasonable range of software in every school. "This way," says Watson, "we would learn much more quickly what works and what doesn't work, and we need the involvement of ordinary schools on a wide scale."



Watson's fear is that, unless this subsidy is forthcoming publishers may withdraw from the schools market and turn their attention towards the much more exciting home market. One million home computers represent a much safer bet than the problematic education market, notwithstanding the DoI's continuing injection of funds.

Others, however, give a very different view of the relationship between publishers and the schools market. They say that the relationship is a symbiotic one, and that the publishers are the ones who handle the technical and marketing problems created by a large demand for educational software.

Bill Tagg, Director of the MEP Chiltern Region, points to two major problems: the time taken to develop software and maintenance and updating.

The Chiltern Region develops software which is either distributed free of charge or sold under licence to other authorities or individual institutions. Developing programs, says Mr Tagg, is an extraordinarily time-consuming and costly business, but the problems don't end once the item is on the market. Bill Tagg estimates that 50 per cent of his unit's resources are devoted



to looking after programs already in the field. This includes queries about programs supplied and updating and re-jigging the software to cater for the opportunities presented by hardware developments.

"RML come out with a new Chain network and all the software for one machine has to be re-jigged". It is as if a text book had to have a new edition every year.

Software, argues Bill Tagg, has a maximum shelf life of two years before technological changes will dictate that it be updated or replaced in some way. Many publishers, he says, are taking too long to develop programs that the technology may overtake them much sooner.

Some producers suggest that the way forward is for the software providers to form firmer links with hardware manufacturers.

Bob Trigger, Secretary of Five Ways Software, emphasizes that it is in the interests of both hardware and software producers to cooperate closely in the development of programs. Hardware manufacturers need to persuade customers that their machines are accompanied by a comprehensive selection of good software (Acorn has already set up its own software house, Acornsoft, and Sinclair has formed an alliance with Macmillan, the book publishers, to produce programs), and software producers need to know what

technological improvements and additions are contemplated by the manufacturers.

This sort of arrangement, says Mr Trigger, would also benefit the export market, as many countries, such as Australia, where the BBC Micro is selling well, are looking for deals which include hardware and software. At present, he says, no-one is producing this 'total package'.

In the short term, says Bob Trigger, Five Ways, which has formed a very successful partnership with Heinemann Computers, sees itself continuing as a contract agency for publishers but eventually the company will be looking more to developing and distributing its own software.

He adds ominously, however, that the company is "not convinced that the education market can support entities like Five Ways". He and his fellow directors will eventually be looking to the home market to subsidize the school market.

Ironically, in view of the smaller number of computers in this sector, primary schools are likely to suffer least in the economic jockeying for position which is going to occur this year and next. The main reasons for this is that there are so many more primary schools than secondary and that much primary software will overlap with the domestic market.

In the USA, for example, Texas

Instruments and Apple are already finding a large home market for their LOGO packages. LOGO is likely to be a standard item in primary schools in many parts of the world and this will undoubtedly encourage Acorn and Sinclair to produce Papert-approved versions as soon as they can. RML have already introduced the first stage of their LOGO for the 4802.



Moreover in primary schools there is likely to be greater consensus on the basic items of software; apart from LOGO, good word processing and information retrieval packages, one or two good simulations and a limited number of drill and practice programs are likely to head primary school shopping lists.

Secondary schools, on the other hand, are a much smaller market. Certainly there will be software which all schools will need, again a good information retrieval package will be one such item. But otherwise, subject specific programs will be the most important item, and, as Roger Watson says, subject specific software is un-

likely to be really attractive as a commercial venture for publishers unless there is an assured overseas market. However, the trouble with the overseas market is that there are all the problems of the home market — at a distance — plus the necessity of producing software for other machines. Apple and IBM versions would be necessary for the USA, for example.

So how do the book publishers see the future of the secondary school market? A number of different approaches are being adopted. Alan Hill of Heinemann Computers is confident that there is and will be a substantial overseas market for both primary and secondary school materials. Heinemann made an early decision to produce their software for the Apple and their secondary school programs are selling nearly as well in the USA as here. They have also negotiated translation rights with German and Dutch companies and are doing the same with some in Norway, Sweden and Spain.

He also has high hopes of Australia. If the secondary school market depends on overseas interest, he is confident that that interest is there: "A unique synthesis of programming skills and educational expertise will make British software attractive in many countries."

Other publishers, more tentative in their entry into the field, are producing software to accompany already successful textbooks, for example Nelson, or successful reading schemes like Ginn's 360 scheme.

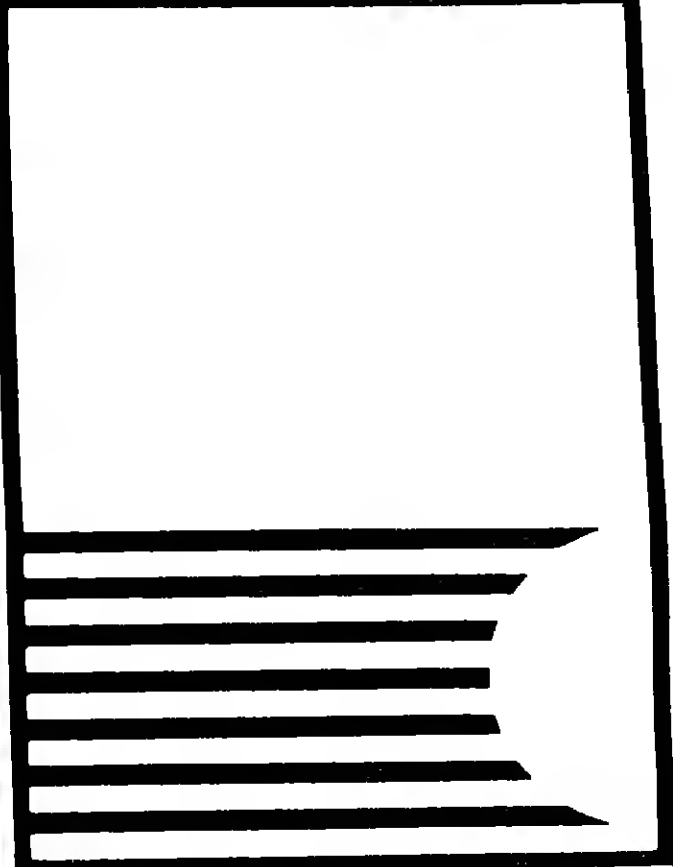
Roger Watson does not dread the diminishing importance of the curriculum development groups. "At the moment," he says, there is "a rather select group of producers talking among themselves". He would like to see more "classroom generated" programs and a situation where teachers themselves have more influence over the development of software, perhaps producing it themselves in tandem with freelance programmers or with programmers employed by the publishers.

Bill Tagg, on the other hand, is doubtful whether any of the MEP-defined publishers will go on producing the subject specific software which will be so necessary for secondary school computing. This, he says, will always have to be produced centrally for free distribution or for sale under licence, which, of course, means continued central funding.

There are only two points on which everyone is agreed. First, software production is in its infancy. In a couple of years from now, says one publisher, we shall look at the software we produced this year with contempt; and second, schools at the moment are not spending much money on software.

At the present rate of acquisition, with software coming out of the normal requisition allowance, the development of good software, which requires the involvement of ordinary schools, will be a slow process and one which may exhaust the patience of many teachers.

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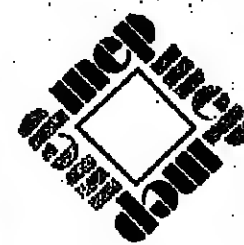
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Neutral screen
Virginia Makins on the nature of cooperation at the computer

Cooperation is one of the names of the games, when it comes to computers in primary schools. "It's wonderful how they cooperate", you're told. And indeed, as you watch children in schools working on micros, it is wonderful.

But last summer holidays, watching groups of 7 to 13-year-olds playing a variety of supposedly educational micro games, I began to wonder about the reasons for the happy cooperation. Certainly adventure games such as Chalksoft's *Pirate* (distributed by Ward Lock) spread tranquillity for hours where frustration had threatened.

Even the major bug the children discovered when the program told them they had solved Part One and could go on to Part Two, then, when they'd loaded the second part, told them sorry, they hadn't completed Part One, was greeted with amused tolerance: the cooperative spirit even extends to makers of defective software.



Acornsoft's *Stonemark* (on their *Business Games* tape), which is designed for more serious uses, but was a great favourite with this profit-minded age group, had the same effect: the player who rigged shares and made a fortune was slapped on the back, and losers would boast for days about the huge fortune made by the winner.

But then they got bored with the micro games and went back to *Monopoly*. Half an hour later we heard the familiar squeals of rage, accusations of cheating, and sound of hoots and houses being hurled across the room and chairs and board being tipped up. It seems that when you physically have to hand over bank notes and (little deeds, things are very different than when the results of each round come up as a neat and neutral balance sheet on screen.

EXTRA

Despite many new developments in computer hardware, the summer was a hard one for computer manufacturers. It was so bad that some observers are now predicting the kind of market crash that brought pocket calculators down in price from £70 to £10 twelve months later.

Computer sales slumped during the hot summer months and the heatwave left several manufacturers beached, unable to find the cash to tide them over to the boom autumn and aie hoping for. Despite the seasonal upswing to the sales, the market is now so crowded that a raging price war has developed with the consumer as main beneficiary.

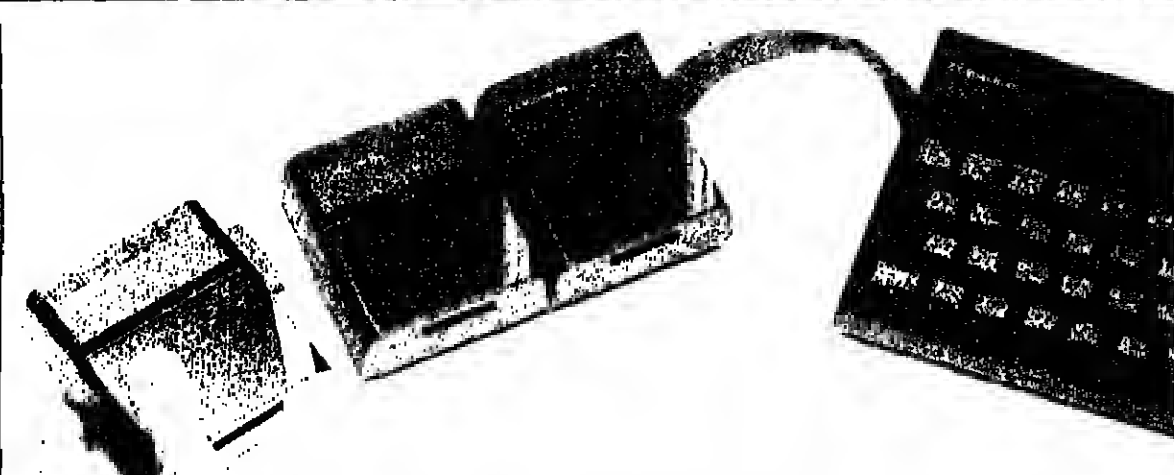
The market problems have been aggravated by some of the largest manufacturers launching whole generations of new products and by the proliferation of High Street computer stores all too ready to resort to discounting to off-set a slack period.

There are many new products that will be of benefit to education. The Acorn Electron and Sinclair's Microdrive are likely to be in great demand and with these the problem is one of supply. Other manufacturers are, however, being forced to make dramatic price cuts.

In the short term the industry's losses will undoubtedly be education's gain, but the long term results are harder to predict. In the meantime, systems that a year ago might have cost £300 are now available for half that price - a situation that breaks all normal marketing rules. This may tempt some schools away from the shopping list provided by the Microelectronics Education Programme and the Department of Industry and as schools use up their subsidy for first computers, there are signs that the problems of compatibility aren't great enough to ensure that they continue to buy a single make of computer.

The first price cut in the educational sector came in May when Research Machines Ltd chopped the price of their smaller model, the 480Z, by 13 per cent. This may have reflected a feeling that the computer was overpriced and against its competition, but any relief for RML was short lived. A month later Sinclair sliced a third off the retail price of the Spectrum, reducing its high street price from £149 to £99 for the 16K version. This price reduction had a dramatic impact on high street sales and market forces then persuaded Sinclair to allow discounting of its tiny ZX81 microcomputer. Today this machine can be found for around £35.

These cuts were followed by the news that several manufacturers were in financial trouble. These did not include Sinclair who recently announced a pre-tax profit of £14.03 million, but some major companies were included. Texas Instruments have been hit badly by the world slump in the demand for microchips and by their conspicuous failure to market



Troubled waters

Ray Hammond surveys the hardware

their TI-99/4A computer successfully. The advanced 16-bit computer has been a marketing failure of heroic proportions, and losses of \$100 million in the parent company have prompted a new round of international price cuts. The TI-99/4A is now offered to British buyers for an astonishing £99. When this micro was first announced on the British market it was priced at over £1,000.

Dragon Data, the company set up in Wales last year with considerable government subsidy, looked like crashing



in August. Despite one significant price cut in the summer, the company had sold 80,000 Dragon 32s against its somewhat optimistic target of 300,000. When Mettoy, a major shareholder, suggested the company had problems, a £2.5 million bail-out was organized within 24 hours and the Dragon 32 lived to fight the autumn sales war. Further price cuts of the machine have been suggested and Dragon Data has declared itself able to respond if the need arises.

The biggest crash of the season has been that of Grundy Business Systems, makers of the impressive NewBrain microcomputer. The company's debts have been announced at £3.5 million and at the time of writing a buyer was being sought to take over production of this versatile and cost-effective computer. In the USA the collapse of Osborne Computers shocked the market place and has provoked a flood of predictions about further failures.

Even the most successful manufacturers have been forced to temper their jubilation with judicious price cuts. At the start of the summer Commodore proudly announced that they had become the number one micro distributor in the UK, but within months of launching the powerful Commodore 64, the retail price was reduced from £45 to just under £200. As one of the manufacturers most favoured by education before the DoI scheme, it will be of interest to many schools to learn that the company has followed up that cut by a swinging cut on other products which averages 25 per cent. The price of a major system, incorporating a 32K PET, a two megabyte disc drive and printer now costs £1,985 against a previous price of £2,750.

Price cuts have followed thick and fast from other manufacturers including Atari, Oric, Tandy and IBM and further cuts may be confidently predicted for the post-Christmas season. The announcement that IBM is going to launch a "low-cost" home computer, codenamed The Peanut, to follow its powerful Personal Computer is likely to lend added fuel to an already volatile situation.

This savage price-cutting is unlikely to affect the BBC microcomputer, however, and the Model B has stayed in the top three on the sales charts for the past few months despite its hefty price tag. The unique combination of DoI approval and the benefits of BBC broadcasting backup are likely to ensure Acorn manage to keep a safe distance between its major educational computer and the new, lower priced Electron.

From an educational standpoint, the BBC Electron is probably the most important new model to be launched for this season. Already hailed as "the

hit micro" of '83, at just under £200 the Electron is likely to be high on the shopping lists for many schools and con-templating additional computers and a version with the BBC name tag is likely to be announced. This micro is also likely to be favoured by educationally aware parents and many demands for copies of school programs may be expected when schools return from the Christmas holidays. Unfortunately this may not always be possible.

Although the Electron may be accurately described as a "cut down BBC", not all BBC programs will run successfully on the machine. The Electron supports BBC Modes 0 to 6, but many BBC programs need Mode 7 and these will have to be adapted for use on the Electron. Despite this, the computer arrives to find a wealth of ready-made software waiting for it, a sure sign that it will be successful.

Because the Electron manages to squeeze considerable performance out of its 32K RAM, most BBC programs run slower on the Electron, although the machine still stands up well in a comparison test with other machines in a similar price bracket. One major drawback for the machine is the lack of a printer port, and although Acorn promise a whole host of peripherals in the future, including full interfaces, these will all add considerably to the basic unit cost.



The Electron is currently being made in Malaysia but plans are already afoot to start a second source of manufacture in the UK to free Far East production capacity for a major BBC micro assault on the US and Australian markets. The supply bottlenecks that ruin the launch of the BBC microcomputers are less likely to occur and the current production of 25,000 Electrons a month will be considerably increased from January.

The second most important hardware development for education is probably the Sinclair Microdrive. This small data storage unit is priced at £80 (including interface) and it considerably extends the power of the inexpensive Sinclair Spectrum. In terms of storage efficiency, the unit is a cross between a cassette tape and a disc drive and it works on the well-established "spring-floppy" principle.

The addition of Microdrive unit enables operations such as word processing and database creation to be undertaken on the Spectrum and the unit is already in considerable demand. Sinclair are currently supplying their Spectrum customers with Microdrives in strict chronological order according to the date on which they ordered their Spectrum and it will be some months before there is a free supply.

Most secondary and many primary schools have now used up their Department of Industry subsidy for the purchase of a microcomputer, and decisions are now being made about further computer purchases. Although Area Education Authorities are often committed to a particular brand of microcomputer, it is tempting for schools to examine the open market to see which version there is any point in trying out other hardware.

The main problem that might prevent manufacturers other than Sinclair, Acorn and Research from getting a toe-hold in the educational market is one of compatibility. The moment a particular computer is purchased software for the machine begins to accumulate and in the commercial marketplace it is estimated that over a period of two years the average computer purchaser is likely to spend three times the cost of the computer on software and matching peripherals. With the exception of printers, this valuable resource is, of course, entirely useless on another brand of computer and, at first sight, it may seem as if manufacturers who don't scheme to get a place on the DoI scheme will have to look elsewhere for marketing opportunities.

But with the exception of Sinclair, the manufacturers who enjoy the privileged position of supplying micros at subsidized prices to schools are less likely to react quickly to market forces than other makers. As a result, the combination of new models, price cuts and new software may be enough to tempt some departments inside schools to try a "go it alone" policy. For these brave souls, there is plenty of new equipment on offer this autumn.

One major complaint until recently has been the lack of a LOGO implementation on "approved" micros. Research Machines have recently released an excellent implementation for both their machines, but the systems to run it are expensive and for schools committed to other brands, the investment is daunting.

Acorn and Sinclair's failure to produce a version of LOGO may prompt frustrated teachers to look at the alternatives offered by other makers. High on this list must be the Commodore 64 which, even with disc drive and Logo program, would work out very much cheaper than a Research package. Commodore have been biding their time during the DoI frenzy and now they may stand to gain from their competitors' failure.

To underline their commitment to education, Commodore recently signed to distribute programs written by Applied Systems Knowledge (ASK), the educational software house set up by Professor Tom Stoney of Bradford and Dr Mike Thorne of Cardiff. There is a considerable base of good educational programs already available for Commodore machines and it is likely that there will be a partial return to the brand in some areas.

Tandy have been mounting valiant efforts in an attempt to penetrate the UK educational market by inviting large numbers of teachers to visit their lavishly equipped teaching centres around Britain. Despite this, only a few authorities have selected the American computers for their schools, but now Tandy products could alter that situation. The Tandy Colour computer is an important consideration simply because there is a Logo implementation available for it. Although it does not have the list-processing abilities of the RML implementation, Tandy Logo has multiple-turles and sprites and could provide an answer for some primary schools. Tandy have also had a bit with their Model 100 "lap" computers and this semi-portable provides many functions suitable for older pupils and students.

Atari are absolutely determined to crack the British market and this determination seems to spill over to the educational sector. Four important new Atari computers have been launched, the 600XL and the 800XL which may be regarded as replacements for the under-rated but excellent top-end machines called the 1400XL and the 1500XL.

The element which makes the new Atari machines of interest to school is a new implementation of Logo. The drawback is the low-level supply of good British education programs for Atari machines, most of which are American produced and travel badly to British classrooms.

Atari Logo, however, could be strong enough to off-set this considerable obstacle. Developed by a team headed by Cynthia Solomon, of the original Massachusetts Institute of Technology team responsible for Logo, the program uses the well-known Atari sound effects, the sounds most pupils would associate with Atari arcade games such as Space Invaders and PacMan. The implementation is impressive, is priced well below the "DoI approved" competition and will undoubtedly provoke much interest in British education.

EXTRA

Jigsaw pieces

Mary Hope on computers in special education

There is every indication that the use of microelectronics with children with learning difficulties is now a recognized part of the current educational scene. There is a steady output of articles, conferences and references and the final confirmation of its arrival was in the summer when Mr Kenneth Baker, Minister for Information Technology, announced that the Department of Trade and Industry was 'setting aside a further £2.5m to put IT equipment into special schools'.

The information given at the time was in general terms as the Department wished to have further consultations and, although there have been no further announcements, it seems likely that it will be like the previous schemes for secondary and primary schools, ask to place a micro in each special school. Which micro, with what peripherals and on what terms are questions that are still being vigorously debated.

A further unresolved issue is whether items which cater for children with special educational needs but who are in mainstream schools, will be included. Pragmatic considerations weigh against this as it just about doubles the number of schools involved, but, on the other hand, it is right to discriminate against authorities that have made attempts to integrate children with special needs.

One of the few certainties is that there will be a starter pack of software going out with the micro and this is currently being coordinated by the South West Microelectronics Development Programme for the DoI. The rest of the jigsaw will, no doubt, be revealed soon.

A further indication that special education is now on the microelectronic map is the forthcoming MEP Presentation, which is focusing on this group. This will be held in Bristol on Monday November 21 at the Grand Hotel. The presentation aims to show the range of ways in which the new technology can benefit children with special educational needs, to propagate good practice and more general-

ly to show the range of work carried out under the auspices of MEP.

Over 60 schools and institutions will be showing how they use microelectronics and the software and hardware that they are developing. The opening ceremony is being performed by Princess Anne. The morning and early afternoon are restricted to an invited audience, but from 3.00 to 7.00 pm the exhibition is open to teachers.

However, in spite of evidence of the increasing emphasis of the use of microelectronics with children with learning difficulties, there are still a number of questions to be answered such as: How substantial is our knowledge about the use of the new technology with these children? Are sufficient evaluative studies being carried out? Can the Special Education Microelectronics Resource Centres (SEMERCs) set up under MEP adequately support schools and I.e.s.s? How many special education user groups are there in I.e.s.s?

Or in other words, from the point of view of the teacher in the average classroom with children with special needs: what are the arguments for using the new technology and what help is available?

There is now a strong groundswell of opinion that as far as motivation is concerned the computer is a winner. For disadvantaged pupils with a history of failure in the classroom this may be a strong enough reason for their use. There is also an abundance of anecdotal evidence about the advantages of using computers to teach basic skills. As yet, however, there are only one or two truly evaluative studies. Questions remain about the transfer of learning from the VDU to real life and about



whether the more positive approach to learning with the micro generalizes to other activities.

There are obviously a small number of children with whom the advantages of using the computer are so evident that no further justification is required, for example where a physically handicapped child is helped to communicate.

As far as some of the more exciting applications of the computer, such as word processing, information retrieval and simulations are concerned there is little experience to draw on and as yet no hard evidence that they enhance the

learning opportunities of children with special needs. In the longer term it is essential that the research bodies and/or DES fund some independent research about this. In the short term if any students are looking for research projects this is ripe territory.

If we consider the practical help that teachers can expect, the infrastructure is there but whether this will be sufficient depends on the needs of the individual teacher. The Microelectronics Education Programme has set up 14 regional information centres where teachers can get advice plus the four Special Education Microelectronics Resource Centres which provide a more specialized service.

At these resource centres teachers can try out the hardware and view the software as well as getting information. Excellent as the SEMERCs are, and the escalating demands on them are evidence of this, there are still geographical problems for large numbers of teachers. One solution is for the I.e.s.s to set up user groups so that teachers with a common interest can share their experiences. The involvement of SEMERCs in this will combine the benefits of a wider perspective with local access. The numbers of I.e.s.s currently doing this is, at the moment, small.

At the national level MEP has produced a number of information sheets: *How to Prepare a Curriculum Development Proposal*, *A Summary of MEPs Curriculum Development Projects*, *An Introductory Reading List and Video*, *Some Software for Children with Learning Difficulties*, *A Review of some software for Children with Moderate Learning Difficulties*.

These are available free of charge from The Council for Educational Technology, 3 Devonshire Street or the SEMERCs.

The gestation period for software is so long that this is one of the less immediate benefits. Nevertheless in the longer term a selection of software specifically written for children with learning difficulties will mean that the computer can be more effectively used.

Teachers can therefore choose an optimistic or pessimistic perspective and find evidence to back it up. On their good days they can look forward to the DoI's micro scheme, visit a SEMERC and consider the large number of software packages that are now available. On less positive days they can question the evidence for effectiveness, feel isolated and wonder why so much of the software is so dull.

Overall there is undoubtedly cause for optimism, but there are a number of issues that still need to be tackled. If you can contribute to this for instance by starting a user group in your area or organizing an evaluative study of software then contact me or your SEMERC Manager.

The addresses of the SEMERCs are: Redbridge SEMERC, Dane Centre, c/o The Teachers' Centre, Melbourne Road, Ilford, Essex IG1 4HT, Tel 01-478 3706, Manager - Jean Tait. Newcastle SEMERC, Newcastle Polytechnic, Coach Lane Campus, Newcastle upon Tyne, NE7 7XA, Tel 0632 665057, Manager - Colin Richards.

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Mary Hope is the MEP National coordinator for Special Education. Her address is CET, 3 Devonshire Street, London W1.

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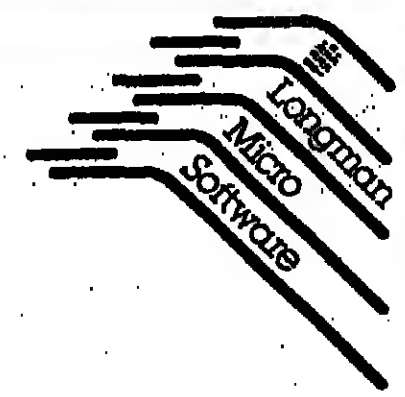
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EXTRA

Who teaches computer studies?

Recent research by Neil Straker has shown that mathematics teachers are being diverted into computer studies in increasingly large numbers. Here he discusses his findings

Computer studies as a time-tabled subject first appeared in schools in the 1960s, although it made no significant development as an examination subject until the late 1970s when microcomputers became readily available in schools. The growth has been particularly rapid in the period 1980-1982, the 1982 total being more than twice that of 1980.

It appears that a natural link has developed between computer studies and mathematics: "It (computer studies) was developed largely by teachers of mathematics and in many schools there would at the present time be no computer studies in the curriculum at all if mathematics did not undertake the teaching. For this reason, many people both within the education system and outside it have assumed that computer studies should be regarded as part of the responsibility of mathematics departments."

(Cockcroft Report, para. 396, HMSO, 1982)

This perceived association between computer studies and mathematics is evident in job advertisements for teachers of mathematics: "ability to offer computer studies an advantage", "an interest in computer studies would be an added qualification" being typical examples. In March and April of 1983, 389 mathematics Sente 1 posts were advertised in *The Times Educational Supplement*. Of these, 126 (32%) made some reference to the teaching of computer studies. In the same period only 29 Scale 1 computer studies posts were advertised.

It is questionable whether mathematics staff should be so closely identified with the teaching of computer studies. The Cockcroft Report warns of the danger of mathematics teachers being involved in computer studies teaching, in that there tends to be too great an emphasis on programming and numerical operations, rather than on data processing and social implications.

Difficulties also arise because of the shortage of mathematics teachers, if mathematics are to be diverted to teach computer studies. The Cockcroft Report places great emphasis on the importance of the head of department's role in raising overall standards of mathematics teaching, and it is therefore a cause of great concern if heads of mathematics are also required to assume overall responsibility for computer studies teaching.

Many mathematics teachers saw career opportunities in developing computer studies, and it has tended to be the more effective teachers of mathematics who have displayed the initiative to introduce the new subject.

As a result of their efforts the subject has now achieved respectability and attracts able pupils. In 1982, the total number of entries for O level was greater than that for CSE.

Cockcroft attempted to quantify the extent of the "drift" towards computer studies and the data, based on 1980 entry figures, suggested that the time devoted by mathematics specialists to computer studies is equivalent to 600 full time mathematics. In order to update this estimate and to provide more detailed information on the delegation of computer studies responsibilities, a questionnaire was distributed recently to 170 secondary schools in the North of England. There were 103 responses (61%).

Fifty-seven heads of mathematics (55%) had overall responsibility for computer studies, and 35 heads of mathematics (35%) were teaching the subject. The mean number of periods of computing taught by the 103 heads of mathematics was 2.0 (based on a 40 period week).

Mathematics teachers, including heads of mathematics, were involved in the teaching of computer studies in 86 schools in the sample (83%).

In certain cases the total number of periods allocated was very high, five schools require a total of over 40 periods per week. The mean number of periods of computing taught by mathematics staff was 1.4. Based on a normal teaching load of 34 periods per week (contact ratio 0.85), the computer studies staffing requires 0.42 mathematics teachers per school.

A crude national projection, based on 4,600 secondary schools in England

and Wales, produces a full time equivalent of over 1,900 mathematics teachers who are diverted towards computer studies. This is approximately three times the 1980 estimate made by the Cockcroft Report, and it achieves greater significance when it is noted that the 1977 Secondary Staffing Survey estimated a shortage of 3,000 suitably qualified teachers of mathematics.

Recent interviews with heads of mathematics have suggested that in practice the consequences give cause for more concern than the above figures indicate. In many schools computer studies is taught by the head of mathematics and the second in department, who are often the more experienced and more able teachers within the department.

This tends to create gaps in the mathematics staffing structure in that the head of Department and his deputy are unable to teach certain groups of pupils, usually in the lower school. When interviewed, some heads of mathematics expressed a reluctance to teach computer studies, arguing that their expertise was best employed in the mathematics department. Non-mathematics teachers were often deployed to teach first and second year mathematics groups in order to fill gaps created by the demands of computer studies teaching.

During the interviews, it became clear that involvement in computer studies was particularly time-consuming in terms of lesson preparation, organisation and maintenance of equipment, marking of project work.

continued on next page

Solid state

Malcolm Hall on a new storage medium

Most primary and secondary schools now have at least one microcomputer and most of these, especially in primary schools, still use cassette for the storage of programs.

Some means of storing programs for microcomputers is necessary since they can only hold one program at a time, and this is lost when it is switched off. Another and possibly more important reason is that the software publishers require some cheap media on which they can distribute their software.

For publishers cassettes have several advantages, viz, they are relatively cheap and easy to copy. However, cassettes are generally unreliable at loading a program into the microcomputer. This makes them difficult to use in teaching. Even if the program can be loaded first time without errors it can still take several minutes.

For the majority of schools the only alternative up to now has been the floppy disc. This overcomes the problems of reliability and can load a program in seconds. The actual cost of a disc is not much more than a cassette considering that each disc can hold more programs. The cost of a disc drive, which is required to read discs, is typically between £150 and £200, depending on the size and quality of the drives.

As owners of home video games and some home microcomputers will know, plug-in cartridges are an alternative. These are small plastic packs which contain what is called Read Only Memory, or ROM.

It is from this Read Only Memory that a program is loaded when the cartridge is plugged in. Since the

memory in the cartridge is Read Only the programs cannot be altered by the computer user, importantly, the program is not lost when it is unplugged from the computer.

Until now this type of cartridge has not been available for the majority of microcomputers being used in schools. Recently Research Machines Ltd, the manufacturers of two of the popular school micros have introduced what "Rom Pack", a cartridge for their 480Z computer.

So how do ROM packs compare with cassettes or floppy discs? Since the ROM pack is completely solid, there are no moving parts. It is therefore, inherently more reliable than a cassette or floppy disc and programs can be loaded slightly faster.

Compared with the cassette and disc, the cost of the ROM pack is high, around £15 plus the cost of the software, which may only be one program. There will, however, be no additional costs since extra hardware is not required, whereas disc drives are needed for floppy disc systems.

It is possible for a ROM pack to be re-programmed if, for example, a new version of a program is released or the original is no longer used by the school. The only expense, if any, will be the re-programming.

The cost of ROM packs could be a problem for software publishers, including Research Machines themselves. The ROM pack added to quite expensive software could deter many customers from purchasing the software. However, the expense can be lowered when a large number of ROM packs is made for one particular program, and publishers might be attracted

by the thought that illegal copying of their materials could be drastically reduced.

Each ROM pack will at present contain about 16,000 bytes of program or data, equivalent to several small programs or one large one. Already planned for next year is a ROM pack which will have four times that capacity, with an increase in price of about £20. Thereafter ROM packs should fall in line with the downward trend of electronic component prices.

The RML 480Z will treat the ROM pack as a disc and allow the user to copy selected programs into memory. The obvious question must be: if the pack contains Read Only Memory, how are the programs originally stored in the memory? This process is called "blowing" and is carried out using a "ROM blower".

The ROM blower is an expensive piece of equipment, and so blowing ROMs in schools would rarely be economically justifiable, even given the expertise and time to organize the programs into the correct format. The process only becomes practicable in large numbers, for example by software publishers.

Schools which have programs that they would like in a ROM pack must hope that their I.E.A. would be time-blown service. It would be time-consuming to blow single programs to order, but the most popular programs could be mass produced for all the schools. Blowing 100 ROMs takes only a little longer than blowing a single one, because of software modifications needed to get it into the right format.

continued on next page

Computer studies

continued from previous page

keeping up to date with new developments, and in giving support to other staff. There were also supervisory difficulties because of demands from pupils to use the machines out of lesson time.

Our conclusions are that:
● The diversion of mathematics towards computer studies has had a serious effect on mathematics staffing in schools, with a full time equivalent of almost 2,000 mathematics teachers involved in the teaching of computer studies.

● To general the more effective teachers of mathematics tend to be those who are also required to teach computer studies. This leads to a situation where non-mathematics teachers are often deployed to teach mathematics to lower school groups.

● Mathematics are no better qualified to teach certain areas of the computer studies course than are teachers of other subjects.

● The hidden demands of computer studies teaching mean that a disproportionate amount of time needs to be devoted to the subject. Heads of mathematics are often required to take on extra responsibility for the computer work, despite an already demanding role.

We recommend that:
● Ideally schools should have computing departments, staffed by specialists. The department should be involved not only in computer studies teaching, but in all aspects of computer education. It is therefore essential that we train specialist teachers of computing.

● If schools do not have computer specialists, it may be appropriate to involve staff from a variety of subject areas in the teaching of computer studies. Mathematics are not necessarily well suited to teach all aspects of the course. Areas such as historical developments and social implications can be taught equally well by teachers of other subjects. It may be feasible for mathematics to feed in to certain parts of the course, such as logic and programming.

● Technical support should be available in order to assist computer studies teachers with routine maintenance and management of equipment.

Neil Straker is a lecturer in mathematics education at Newcastle upon Tyne University.

Computing in the curriculum

Jerry Wellington suggests ways 'to improve the quality and quantity of teachers of computing'

"Action must start in the schools. We support the moves which are now putting computing on the curriculum. But it is no good just providing your BASIC programs. Universities in fact are having to give remedial education to entrants with a level computer science. Teachers must be properly trained, and the language taught chosen with an eye to the future."

Action is also needed to increase the stock of computer science teachers by training existing teachers of other subjects in computer science and by encouraging young computer science graduates to enter teaching. The teaching of computer science in schools must be increased substantially, in quality and in quantity."

(The Alvey Committee).

How many people connected with education - teachers, lecturers and administrators - have read the 1982 Alvey Report? Yet its 70 pages may, indirectly, have more influence on English education at all levels than any other report in the last ten years. Its main thrust is that Britain should respond to Japan's recent unveiling of the "Fifth Generation Computer Programme" with immediate investments of hard cash into information technology. This money should flow into both industry and education.

The report is based on three perceived options for the future: either Britain should seek to be at the "leading edge" of information technology, or rely upon imported technology, or opt out of the race. Only the former option is seen as worth considering, (paragraph 3.5). To follow this option, and stay in the race, trained manpower is needed. This is where education comes in.

The Alvey report devotes a whole chapter to "Human Resources" - training and education for its proposed information technology programme. This chapter welcomes "the moves which are now putting computing on the curriculum". But it identifies the

urgent need for an adequate supply, in both quantity and quality, of properly trained graduates to teach computer studies as a school subject. While supporting this recommendation, I will argue later that other, broader changes, are needed if Britain's teacher training system is to adapt to Alvey's information technology era.

But first, who are the people teaching computing as a subject in its own right? The number of graduates actually trained to teach computer studies is shockingly low, in spite of the fact that, as a school subject, it is now firmly established. Total examination entries in 1982, from CSE to A level, were in excess of 79,000. Thus it already attracts more candidates than German, and if present trends continue, will soon reach the level of French.

Yet in the 1982 entry to teacher training there were only 26 students taking computer studies as the main subject of their PGCE (postgraduate certificate in education) in the whole of

On p45 Michael Thorne examines computer studies and on p42 Robin Ward asks why girls are not interested in computer studies.

Erroneous programs

by David Ashfield

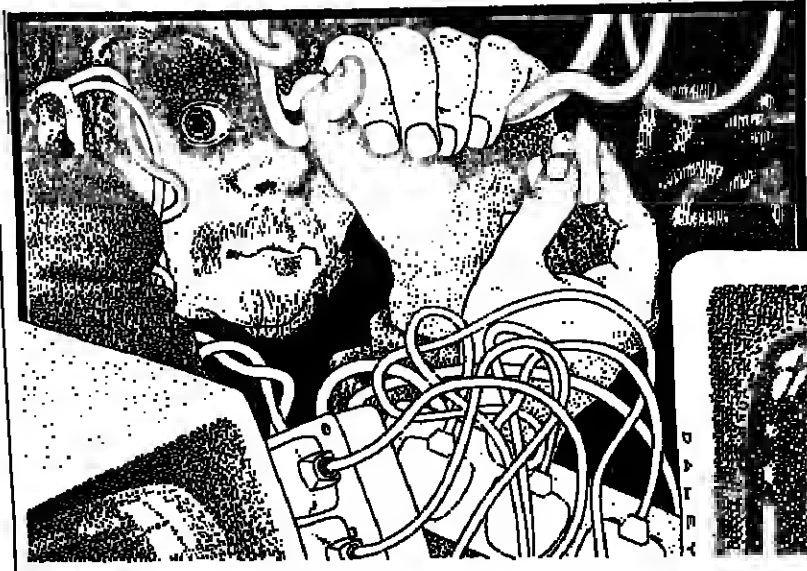
Very many primary schools throughout the country are currently receiving, along with their BBC microcomputers, four glossy-presented software packs from MEP, the Micro-electronics Education Programme.

These packs contain "educational software specially written for use in schools", were produced in conjunction with the DES and received substantial financial support from the Department of Industry. This being so, they may well be treated as authoritative units of valuable software by many schools.

Take *What Shape*, the idea of Anne Liddle and Joe Telford of Cleveland Educational Computing Centre. This is a program to "enable children to consolidate their understanding of the properties of four basic shapes - square, oblong, triangle and circle". The child chooses a shape and the computer guesses what it is by question and answer.

In testing this program for use in the school I teach in, I chose the circle. The computer then asked me how many sides my chosen shape had. I refused to accept my answer of "an infinite number", preferring to give "one" as the correct answer. Its follow-up question vexed me sorely - "Does your shape roll if you push it?" I was now not surprised to be subsequently told that "a four-sided shape, with all sides the same length, is called a square". "An oblong is the proper name for a rectangle" and "a four-sided shape, with opposite sides the same length, is called an oblong".

For those teachers who, like myself, believe that correct concept-formation is vital at an early stage in mathematics, this program is a disaster.



England and Wales. There were none of the BED training route. The table shows how these figures compare with graduates training to teach German over the last three years.

Somebody must be teaching the huge numbers of CSE, 16+, O level and A level computer studies candidates in schools. Neil Straker's research shows that these teachers are being drawn into computer studies teaching almost entirely from mathematics and the physical sciences which gives rise to the difficulties which he outlines.

Well-qualified and competent teachers of mathematics and physics are already in short supply. If they are drawn into computer studies teaching further "hidden shortages" will be created in the existing shortage areas.

Clearly a determined and immediate response is needed to improve both the quality and quantity of teachers of computing. The Alvey report sug-

gested "encouraging young computer science graduates to enter teaching". But how will such graduates be attracted to a teaching career when tempted with lucrative, exciting jobs in industry? The problem is reminiscent of the acute shortage of physics graduates entering teacher training in the late 60's and 70's.

The Swann report of 1988 suggested paying them more than teachers of other subjects - will Swann's suggestion, of priority categories in school teaching be resurrected? If initial training cannot respond then a vast programme of in-service training and conversion courses will be needed for computer studies to flourish as a well-taught school subject. Without an adequate programme of teacher training it could well retain its record of having the lowest pass rate of all CSE subjects.

Though Alvey's recommendation for teacher training is to be welcomed

continued on next page

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EXTRA

Electronic field trips

John Anderson, John Coll and Ann Irving suggest that schools consider 'visits' to the databases of other organizations

The kind of field trip we are talking about is similar to that which the computer literate youngster in *War Games* went on when he became an electronic gatecrasher, first into his own school's electronic examination marks office, and then into the Air Defence headquarters computer. He made both of these trips without leaving his bedroom.

Teachers are used to arranging field trips. They go to the factory, bank, airport, police HQ, newsroom, library, power station, weather station, warehouse, museum - to any place where school parties are welcome. Welcomed by staff who explain, handle questions, allow the pupils to explore, sample, touch, seek and gather information; to learn.

My mum has an old fashioned view of field trips!



They're good for the hosts, because they offer opportunities for promoting product and image, and they are therefore a worthwhile investment of staff time. They're good for teachers because they offer highly-visual primary sources, an essential antidote to the mediated, secondhand experiences found in most classrooms.

An electronic field trip is a visit to and exploration of databases on mainframe computers of many organizations, companies and institutions but visits can be made without leaving the classroom. Gone are the restrictions of bus and train. The classroom walls turn to glass and the view is a striking world.

The trip may not be to the whole database, it may be to a limited part of it; it may be a well structured visit, structured that is by the organization involved. School parties do not usually get a look through the finance office records, nor do they get to plunder the personnel records file cabinet, nor the

they told the combination number to the bank vault, or allowed to take over process control on a production line, except in a highly supervised way.

In fact many large database owners, especially in large employer organizations, already have a kind of "front parlour" to their databases which they use for their own staff training. A trip through the database for, say a modern electronics company, can be for an outsider a really intriguing insight into the operation of a company of that kind. The level of information need be no more than common knowledge about such businesses. For the pupil that can be enormously interesting and worthwhile.

How fanciful is this? Surely the equipment and costs are beyond a school? Thanks to the start given by the DOL microcomputer subsidy purchase schemes, secondary schools have, on average four computers.

Both of the most common makes have the software available which turns them into a general purpose computer terminal. Schools have phones and British Telecom (BT) provides a service (called the package switched stream, PSS) to the growing majority of the telephone users in the country to allow local call charge computer phone-calls to any part of the country. The fee device to make the link-up could be as cheap as £80 for the modem that takes the computer communications and turns them into signals which the telephone line can cope with.

This standard of modern, however, is still not up to the full communications standard to which most mainframes operate and which would allow the BT PSS local call charge facility to be used. But, estimates are that a fully standard communications capability (1200/1200 full duplex for the technically minded) could be made economically in a year's time.

As for costs, schools would need help. It is not realistic to expect school



budgets to adjust quickly to increased telephone bills even if only accumulated at a local call rate. Moreover a fully used communicating micro would require its own data/phone line. There is however no doubt that schools are going to have to be persuaded to get used to regarding the telephone as more central to their working educational purpose than they do at present.

As for the database owners: many of their systems are commercial concerns for which access is charged. But for the same reasons for which ordinary school trips are encouraged, they could be persuaded to provide free or subsidized electronic visits.

Moreover, giving a full telecom-

munications capability (1200/1200 full duplex) to the school micro removes one more obstacle to setting up a UK educational mainframe system through which many operations (including, for example, full software distribution and exchange services, materials and other resources ordering and indenting systems, examination, reports and all the myriad of school administration tasks) could be run. Discussions are taking place to try to pull all these possibilities together. British Telecom, Mercury, PSS, Prestel, Cefax, database owners and teachers are all seriously interested.

If they succeed, what are the enticing electronic field trips which might be on offer to school parties? Prestel is probably the best known public access database, but is often wrongly described as the only one.

Prestel could supply software; the Children Advisory Unit at Hatfield is exploring the use of Prestel as a gateway to large databases of information, like the historical census database for which they are well known; the Council for Educational Technology has developed a very comprehensive framework for an information service about the education business itself and about Information Technology; Club 403 had allowed West Midlands schools to turn Prestel into their own electronic schools newsletter.

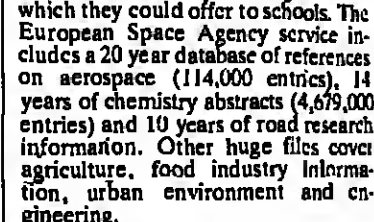
However, a good part of Prestel's remaining contents are somewhat trivial and impoverished when it comes to using them as a "real-world" information base for many school subjects.

Viewdata systems themselves also have inherent limitations compared with other information systems which have a free-format full-text storage capability. This can be fully searched for matching any word or number, unlike the more heavily structured viewdata format which builds small frames of text into a limiting tree

structure. Viewdata finds it cannot quickly handle the large volume of two-way communications of data which would be necessary to run a full telesoftware exchange or an electronic communications service. Gateway helps a little, but how much better to access the mainframe directly without the restrictions of the 40x25 viewdata format.

Ideally, the classroom micro should be equipped, and subsidized with the telecommunications add-ons which allow access to Prestel and to all databases systems, not just to one of them.

The number, variety and wide ranging nature of databases available on line is enormous. On Euronet Diane there are nearly 400, all within local phone call charge to many schools. Libraries, museums, universities, research institutions, companies, many organizations from the science, technological, financial and arts communities have some very exciting contents which they could offer to schools. The European Space Agency service includes a 20 year database of references on aerospace (114,000 entries), 14 years of chemistry abstracts (4,679,000 entries) and 10 years of road research information. Other huge files cover agriculture, food industry information, urban environment and engineering.



A service called Textline provides current facts, figures and comment from a wide variety of business publications worldwide, coverage or economic data, attitudes, trends, forecasts, summaries of parliamentary and political events, legislation and public affairs.

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Computing in the curriculum

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It concentrates on only one, rather narrow, strategy for developing information technology in schools via teacher training. Two other equally pressing needs in initial training were not identified by the report.

A second way of "putting computing on the curriculum" is by the use of computer assisted learning (CAL) in existing school subjects. Pupils will thereby root the computer purely as a tool in helping them to learn a topic, an idea, or a skill. Hence a primary aim of teacher-training in relation to CAL must be to expose students to the software available in their own subject. First impressions are vitally important here. Postgraduate trainees of 22 or 23 need just as much convincing, as a teacher nearing retirement that the use of a computer can help their lessons. If students in the areas of, say, languages or humanities see poor, unimaginative programs which (at best) reflect the educational aims of the previous decade they are unlikely to investigate CAL any further.

Thus the second aim of teacher training must be to show students in all subjects the potential, tapped and untapped, of computer assisted learning (for example) simulations, educational games, and modelling. The third aim, following on from the first two, must be one of teaching students how to evaluate software. On what criteria can it be judged? What are its educational aims? How do pupils react to it, and so on.

Fourth, and finally, all students must be shown ways of bleeding CAL into existing classroom organization and existing schemes of work and syllabuses in curriculum planning. Ways of integrating CAL into school curricula and organization need to be developed in a careful and rational way.

These joint aims of exposure to, evaluation of, and planning for CAL must surely form part of the common core of all future teacher-training courses. In addition, there will be some students who wish to write their own software and develop programs in

their own subjects. Hopefully, students from a wide range of disciplines will be encouraged, and optional courses in programming will be made available to them.

One final pressing need exists in teacher training if it is to respond to the growth in information technology advocated by the Alvey Report. In more and more schools computer awareness or appreciation courses will be arranged for all pupils, in addition to the examination courses for the minority in computer studies or computer science.

Computer "awareness" could be developed in science, craft, design and technology, commerce, history, geography, English, mathematics, physical education and music. The "information technology" aspects of all these subjects could be taught by the usual subject teacher with help, guidance and suggestions from some sort of coordinator or school "computer service". This cross-curricular approach has two obvious advantages. First it will create a far more broad and balanced approach than a course developed and taught by one person. The history teacher could, for example, discuss the changes in information and its transmission from smoke signals to satellites; the enormous growth in information and its importance; the comparison between the so-called information and industrial revolutions; and over the military and economic pressure since 1940 which led to the evolution of computers.

Craft, design and technology could look at process control and robotics; the science department could show data capture and analysis, and perhaps delve into microelectronics and logic circuits. The possibilities in almost every subject, including music and PE, will become endless. This leads to the second advantage of this approach. It creates the involvement of all staff in an area of widening influence and growing importance. A team effort, guided by a coordinator, would serve

continued on next page

Electronic field trips

continued from previous page

On Datasolve "World Reporter" service, the text of all of the overseas broadcasts monitored by the BBC Corporation centre and all the reports from BBC reporters in 120 countries are available; in addition, the briefings from *The Economist* are all these can be searched, word by word. Last month the total output of one of the world's largest news agencies, Associated Press, have been added. Data are underway to add all the Fleet Street quality press to Datasolve. The database grows by 90,000 words a day and six government departments are already paid-up users.

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The Meteorological Office combines radar and infrared satellite weather pictures, renewed every 15 minutes, which can be animated on a video to show weather patterns. All of this information is an important commodity to the Met Office, but not after it is some hours old. Yet it is a valuable resource to schools at any time. The Ordnance Survey is constantly mapping the UK onto computers, about 10 per cent has been finished. Access to even the most limited parts of these two databases would revolutionize those aspects of geography teaching in all of our schools. The possibilities are endless. Where is the nearest phone?

The authors all work for MEP. John S. Anderson is Deputy Director, John Coll is Software Manager and Ann Irving is the national teacher training coordinator for CAIS-Communication and Information Systems

Computing in the curriculum

continued from previous page

reduce the feeling of many staff that "computers have nothing to do with us".

Teacher training institutions could embrace such an approach by updating their own courses. All tutors and lecturers could introduce aspects of information technology into their own subjects partly by direct teaching, and partly by using the new technology in their own courses. It has become a standing joke that teacher-trainers give didactic lectures to their students on how not to be didactic. It would be unfortunate if they were also accused of giving archaic talks on the appearance of new technology in teaching.

To sum up then, there are three major needs in teacher-training which will arise with the spread of information technology (during the post-1980 revolution) as some have called it. First there will be a growing demand for properly qualified and trained teachers of computing as a subject in its own right, whether it is called computer studies or computer science. This need was identified by the Alvey Report. In addition all teachers will need to be shown the potential of computer assisted learning as an essential component of how to evaluate it and plan for it.

Finally, there will be an increasing need for an awareness of computers and information technology across the school curriculum. This teacher-training in all subjects will need to be a way of seeing their own discipline, information from word processing and retrieval to robotics and artificial intelligence. In this way information technology will permeate the whole school curriculum instead of being solely a subject in its own

John S. Anderson is a lecturer at Surrey University's Division of Education

EXTRA

Comprehension programs

P M Bleach on reading and computers

and thus leaving the teacher free to teach elsewhere. Responses are recorded and the teacher is able to return at the end of the session to discuss any points arising.

Another contributor to the conference, Dr Helen Gittinger, from Florida, took the theme of children's needs in relation to giving them confidence in reading and writing. She described the "Writing to Read" system, based on the work of John Henry Martin, which used computers in the early reading work of kindergarten and first grade pupils. Children have access to a language room for about an hour a day, having initial input from computers, and then integrating this with follow up work from resource books, group work with the teacher and an opportunity to write their own free stories using typewriters.

Children are introduced to 44 written symbols, via the computer, which represent the language that they speak. In learning the symbols, Dr Gittinger maintains the pupils are

capable, early on, of writing fluently. The system is based on the supposition that the two processes of reading and writing are interdependent. Young children can express complex ideas orally. They can construct compound sentences, subordinate clauses and hypothetical contingencies. Teaching them to write builds upon their advanced language skills - by learning to write, they learn to read. The computer facilitates this process.

The computer program used is designed for IBM machines and leads pupils through sequenced, self-paced loops of interactive learning. There is an automatic specific review when the cycle mastery loop indicates such a need. The computer aids the learning process because the children are self-motivated, understand what they are doing and even the logic of it.

At present, this multi-sensory program, which makes extensive use of a voice synthesiser and headphones, is only available in America, but may be in Britain in a year's time. The

program has been field tested for about two years and results in America are encouraging. Certainly the typed format of children's work is very appealing, but the lack of correct spelling takes some getting used to. Results do indicate, however, that the children become acutely aware of spelling and easily make the transition to book spelling.

A more radical approach is adopted by Valerie Yule, an honorary research fellow from the department of psychology at Aberdeen. She is currently looking into the diversity of children's special needs and seeking to find alternatives to standard, traditional methods of teaching. Her ideas are carried over into her work with computers, which seeks to depart from what is currently available from software companies, which often just jazz up the old paper and pencil methods.

She has developed a program to encourage faster reading with comprehension and transfer to books. Part of this makes use of a system of "short" spelling with an understanding of structure and phonic synthesis. She is also concerned with how children cope with actual screen lettering and display and thinks that teachers should develop an awareness in this area and put pressure on manufacturers, if necessary, to achieve a format that meets children's required needs.

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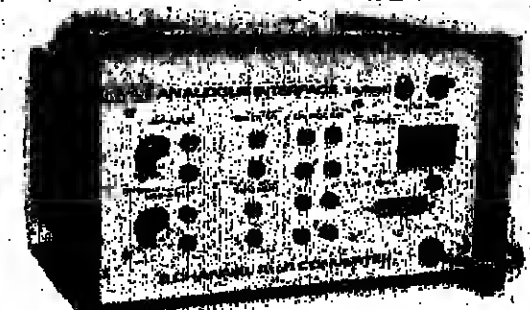
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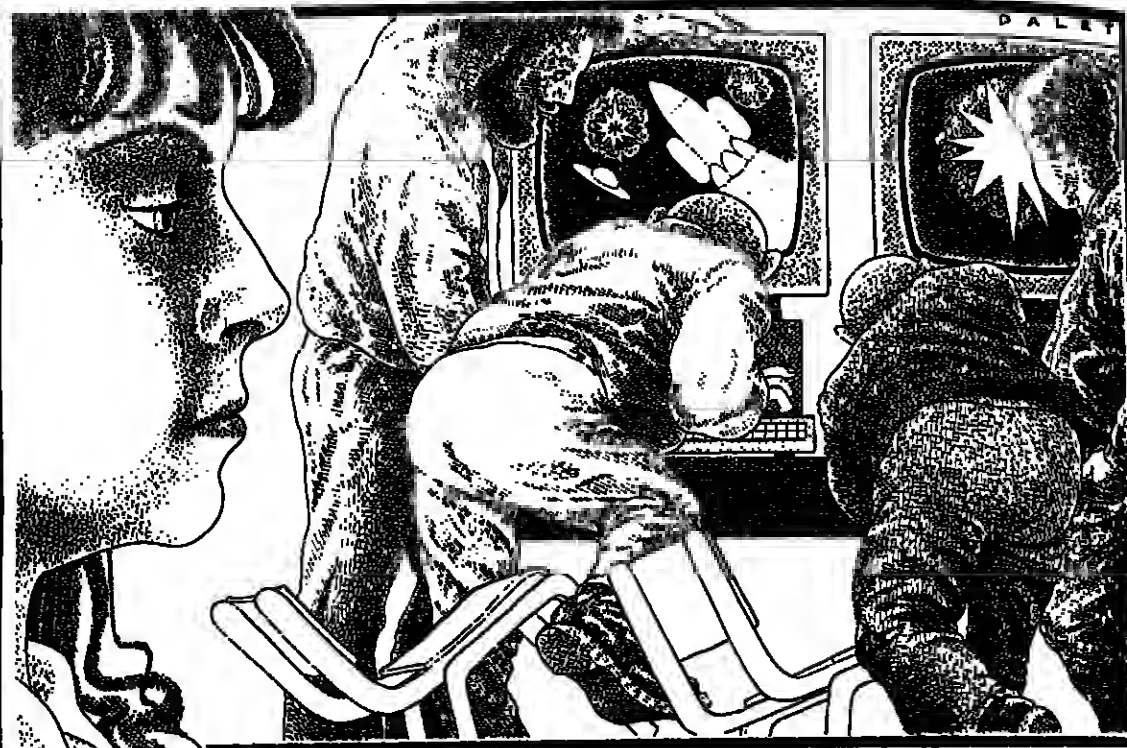
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Wasted potential

Girls are opting out of computing in schools. Robin Ward looks at the reasons and describes a project which aims to correct this trend

It has been apparent for some time that men dominate the technological scene. The Equal Opportunities Commission and the Croydon Education Authority have decided to look into this question in depth and attempt to seek a solution in some schools.

The underlying assumption is that men and women have different approaches to life and that many subjects, especially science and mathematics, are presented in such a way as to interest the boys and alienate the girls. In Croydon's new Information Technology course, we aim to correct this.

Other countries besides Britain have become concerned enough with the present trend to set up projects to review the situation and find solutions. The Netherlands have formed GASAT (Girls and Science and Technology) and Norway has a 'Girls and Physics' project, both of which aim at greater technological appeal to girls.

West Germany is openly concerned at the hostile attitude of girls to technology and Australia has determined to develop scientific and technical competence in girls. Canada is reviewing the problems of girls' technology through the Science Council and the United States has set up a programme for science technology courses in college which don't stipulate a basic background in the subject in school.

Researchers in the USA have found that there were statistically significant sex differences for both the use and liking of computers.

The boys' beginning computer courses outnumbered girls three to one and in advanced programmes, only five per cent of the participants were girls. The students rated the computer program titles on these courses as being primarily for males. 'The gap between the sexes is being dramatically widened by computers. There is a danger of a split-level society. The computers are being sex-typed as male machines', says the report.

Dr Irene Mirra and Dr Robert Hess of Stanford University, California, predict that by 1995 there will be an estimated 48 million computers in the United States and nine out of ten women will be employed outside the home. Competence in technology could be an important prerequisite for a wide variety of occupations.

Important though it is to discover that Britain shares the same problems as other countries, it is up to the educators to ensure that our girls do not fall into the trap of apathy and anxiety faced with the new technology. The Manchester based GIST (Girls in Science and Technology) and the OATE (Girls and Technology Education) project at Chelsea, pro-

vide support for, and work with, teachers to produce curricula to interest girls.

Croydon (with the Girls and Technology Unit of the DOL and MEP) has begun a project to produce an Information Technology course for the secondary schools. Although the course is aimed at boys and girls equally, the emphasis will be to ensure that the girls are motivated and that the syllabus appeals to them. It is just as wrong to create an artificial situation where material is aimed specifically at girls as it is to ignore them. All students should be integrated into the programme on an equal basis.

A great deal of the responsibility for the success of such a project rests with the classroom teacher. It is essential that there is an awareness of the potential problems, such as girls fading into the background or not actually creating material. Studies undertaken by the Croydon IT Project show that, although girls are excited by computers initially, their interest gradually wanes until, in far too many cases, they drop computer studies altogether or fail to sit the exam. There appears to be a number of reasons why this is so.

Many of the girls who chose computer studies as an option at the end of their third year in secondary school, did so without any knowledge of what the course was about. They found the syllabus was far too technical and appeared to favour the interests of the boys. They were disappointed that what was offered did not seem relevant to them or their possible future careers.

The new IT course covers not only computing but also other communication based topics. It includes typing, wordprocessing, printing, coding information as data, keeping records, creating and using data bases and microelectronics. It should provide a base upon which the girls can build. By the time they come to choose their options, the girls should be able to assess for themselves whether or not they wish to take an examination course in computer studies.

The actual choice of options is another problem. Many schools block computer studies against subjects which girls consider very important. The staff responsible for devising the timetable should be more aware of the emergence of technology as a major factor in the employment capabilities of the students. Narrowly based curricula should be avoided.

Once the girls have chosen to take computer studies, they are often in the minority. This is partly due to society's prejudices and partly their own feelings of inadequacy. Computer studies departments appear to view women

as just having keyboarding skills. The material provided stimulates the boys, and the girls fall further behind as their interest dwindles.

They are apt to be unsure of their own abilities and the response patterns reflect the boys' greater self-confidence. Here, again, it is vitally important for the teacher to take steps to involve the girls and tone down the aggressive approach of the boys. Time on the computers must also be closely monitored as the boys, being larger and louder, are apt to take over completely.

Computer clubs highlight clearly girls' lack of motivation. Often they allow themselves to be intimidated to such an extent that they eventually give up, leaving the field clear. Many of the girls find that when the time comes, they fail to be entered for the O Level and CSE examinations. This is often because the time before and after school is very important in terms of completing compulsory exercises for computer studies, and the girls have not had the opportunity or the time which they needed.

Another consideration is that girls tend to associate their lack of confidence in mathematics with learning technology. Many schools, faced with the problem of introducing computing into the curriculum, found that the people most prepared to teach it were mathematicians. Computer technology comes under the auspices of the mathematics department, where a large percentage of the teachers are male.

These factors combined to discourage female participation. Ideally the course should be taught by teachers who have communication skills and an interest in technology rather than by teachers who are predominantly interested in the devices themselves. The Croydon Information Technology programme directed by Trisha Strong is designed so that any competent teacher with good communication skills can bring both girls and boys an equal level of achievement and enjoyment.

Parents should be helped to acknowledge their daughters deserve the best possible chance to excel in a technological future - either in a career or in their personal and social lives; that computers are not 'boys only' machines and that young girls might also love computerised games and toys.

Science and technology are not a male prerogative. Unless this inherent belief is tackled, there will be a wastage of potential for many individuals and hence society generally. Robin Ward is Assistant Director of the Croydon IT project.

There is one potential growth area in the UK that is rarely talked about. Converting the potential into a reality would be a fascinating and complex task but it is one that will probably have to be realised. But few who work in the field doubt its presence, right here in the UK, under our noses.

The potential I'm talking about lies in the minds of those tens of thousands of teenagers who are switched on by microcomputers. The machines are everywhere. Virtually every school of any size or for any age has one, or two, or several. They are in hundreds of thousands of homes. They are on shelves in most large stores; on major railway stations; in mail order catalogues; advertised in magazines and newspapers; on television. Where two or three teenagers are gathered (it seems) there also is a microcomputer.

Many of these young people will leave school and not find work, others will go on to further education and hope that it will lead somewhere. Yet they have abilities that, properly challenged (and therein lies the problem), could fuel a whole new major industry for the UK.

The world-wide demand for microcomputers that can receive, process and present information is growing rapidly. Within a decade the demand will be huge - hundreds of millions of pounds per year - and the skills of the people who can develop and market such materials will be highly prized. Among the most highly prized skills will be the ones that can make microcomputers receive, process and present information in ever more varied, powerful, stimulating and complex ways - the skills that produce software.

At present, a key stage in developing software is that of coding - providing the precise instructions the micro-

Minds for the future

The skills that produce software are very much in demand. Tony Clements, director of Five Ways Software, asks why girls are not applying for jobs in this area.

computer needs to switch it from a useless box of (American and Japanese) components into a (potentially) powerful tool - and it is at this stage that teenagers (particularly UK teenagers), have the greatest abilities. Some of them, and not necessarily the most academically able ones, are staggeringly good.

Anyone who has worked with young people on the serious production of microcomputer software will have had the same experience. When confronted with a genuine task to code, these young people tackle it with confidence, speed and imagination. They often show great inventiveness and originality in the way they approach the task - stories are legion of the superiority of young people at coding compared with their teachers. Doubtless teenagers world-wide are displaying the same skill but, for the immediate future at least, UK youngsters have the edge. They speak English (a considerable advantage at present); the Government has pushed microcomputing in UK schools faster, further and with more intelligence than is the case in any other country; and the British appear to be particularly good at software.

To this point I have referred to young people in general. But this is misleading. Surprisingly (at least to me) and regrettably I should have referred to young males. Evidence is growing that here, as in so many other areas, it is boys who are taking to microcomputers with alacrity; girls for the most part show far less interest. For some time Five Ways Software has employed eighteen year olds as programmers. The information advertising the posts is sent to every secondary school in the country so it is reasonable to assume that both sexes see and read it in roughly equal numbers. Yet, of the 500 or so applicants received last year, less than 30 were from girls.

Logically, I can see only four possible reasons for this. Most of the posts are for one year for those who wish to take a break between A levels and university or college; perhaps girls in general do not consider such a course desirable but prefer to complete their full-time education as quickly as possible. Perhaps teachers and/or parents inadvertently push boys in this area at the expense of girls. Or is it that the amount of equipment available is so limited that girls are pushed out of the way by the naturally more aggressive boys? - this of course would not explain why girls from single sex schools are not applying.

The fourth logical possibility is that, despite the great female outcry for equality of job opportunities, girls don't actually want real equality but are content to remain in a subordinate role. (Imagine the response of most females to such a suggestion).

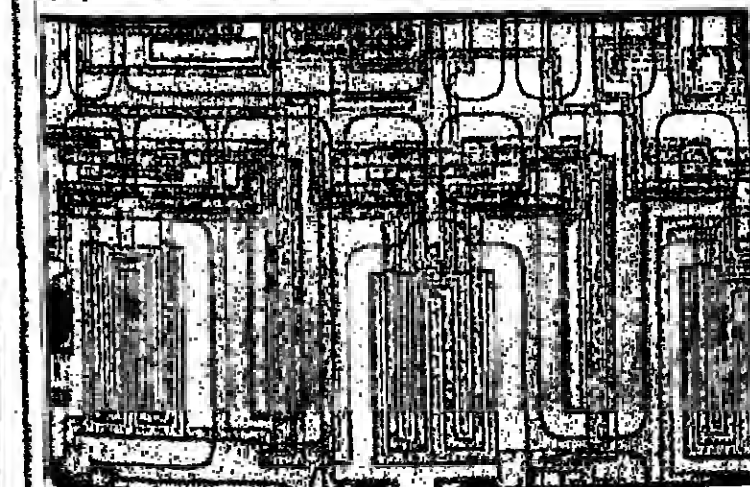
The facts, as seen at Five Ways Software and other companies, are simple. Girls do not apply and so, in practice, the UK is dispensing with roughly half its potential (young) workforce in this area. And this at exactly the time when current trends are making the job opportunities in microcomputer software ever more attractive to girls, whether they want a long term career, or part-time work opportunities, or both.

room, clutter layout and diminish the effectiveness of the page. For example, how many times have you seen "Press the SPACE BAR to continue" at the bottom of a screen page? After a short time the message is treated as a symbol and not read at all. So why not use a symbol in the first place and explain its meaning? Loughborough Primary Micro Project uses a box in the bottom left hand corner of the screen which means "Press the SPACE BAR when you have finished reading the page and want to carry on."

Once explained, this convention is easily adopted by children and it releases the line normally occupied by this message for other, important, information. Redundant text is a real enemy of good screen readability and should be as judiciously avoided. Every item should be weighed in the balance and discarded if superfluous.

Another factor affecting the efficiency of screen layout is the poor use of upper and lower case letters. Reading research shows that mixed case text, appropriately spaced, enhances even a mature reader's performance. Single spaced, block capitals can make a page very much harder to read, and poster-like organisation in blocks of text presents problems. It is best to set the text to the left and indicate its importance by spacing. Also, items related to one another should be similarly spaced, while new information is spaced further apart, the spacing symbolically representing the change and conforming to standard paragraphing practice.

Lack of proper punctuation and natural language can also spoil programs. The messages take up



Screen tests

Insufficient thought is being given to how programs are presented on the screen. Tony Gray describes the guidelines which have been adopted by the Loughborough Primary Micro Project.

Software can be ruined by giving insufficient thought to the way in which a program is perceived by those using it. In education there is the additional danger that children's learning will be hindered.

There are three areas which create major problems:

Screen layout: screen pages must be readable. It must be obvious which text is important and which is there only to help with using the program.

Interaction with the program: every time a pupil is asked to type something, there is a key or make some other response, the mechanics of this interaction must be easy and clear. The children must know precisely what is expected of them without having to guess this information out of a tangle of words.

ready. This gives control to the pupil, avoids confusion and is akin to normal book reading.

Related to this is the use of "timing loops", set by the programmer, which turn pages automatically. Normally, these should be avoided. The timing cannot suit everyone and makes the pupil anxious to finish before the text is taken away. Give control to the reader by using a key press to "turn over". This builds confidence and makes pupils active participants rather than passive victims of the program.



The next point concerns redundant information on the screen. Information which is unnecessarily presented over and over again is ignored after the third or fourth reading. The inclusion of redundant information on screens has proliferated, proportions in some programs. The messages take up

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Careers needs

Peter Bartle and David White on the results
of a national survey

The CCDCOIC Training Project is a three year undertaking conceived as an additional resource for all COIC product users whether they be teachers, FE lecturers, careers officers or YTS staff. The project is designed to enhance the use of existing materials by offering short in-service courses which both raise issues and develop skills of current relevance to the various groups.

It was decided to design a course which would enable participants to raise issues and identify and develop skills in the computerized careers education area. It was soon apparent that, though computer usage and development in the careers service was being monitored and reported on at a national level and similar activities were under way in higher education, little appeared to be known about the use being made of microcomputers in careers education for the 13-18 age range. Without such knowledge the design and implementation of the in-service course would clearly be difficult, and so it was decided to undertake a survey of the current situation.

This national survey was intended to:
● investigate the existing uses being made of computers
● identify available software, whether "home grown", regional or national
● consider the immediate and medium term need for computers in the careers education field
● provide a base upon which to design an in-service training course by identifying current issues.

It was recognized that a national survey in the time available would produce a wide ranging, though perhaps shallow view, of the situation, and so a parallel inquiry was initiated. This was an attempt to assess the current usage of computers in careers education in one local education authority and at the same time inquire into the attitudes of careers teachers towards the possible applications of the new technology in their area of the curriculum.

Teachers appear to have no difficulty in describing their fears, apprehensions, and uncertainties regarding computer usage. It is arguable, nevertheless, that careers education presents exceptional opportunities to use the microcomputer to its full potential.

One issue, and one which is certainly not confined to the computer area, is that of finance. There are concerns about the cost of using computers

and running costs, and a determination not to be caught out by early investment in what may yet prove to be merely the latest educational gimmick. This apprehension can only be resolved by a clear understanding of careers education and of the varying roles that computers may play in that process; it should not mean the redefinition of careers education to fit the capabilities of the technology.

Shortage of money does not necessarily imply a difficulty of access to computer technology; the main difficulty appears to be teacher unease in the face of the unknown. There appears to be a reluctance among many to experiment with a computer, and teachers have been frequently observed to study and admire programs and yet to avoid touching the keyboard at almost all costs! The consequences of these attitudes may be that, unless those involved in careers education are prepared to overcome their apprehensions and assert their need for access to computers, the machines may well remain the province of the computer studies, maths and physics departments.

Teachers foresee a range of problems related to software. There are difficulties in procuring programs - many publishers being unwilling to provide inspection copies because of the ease with which they may be copied. Even if these are provided, the complexity and multiplicity of routes available in many programs makes software difficult to evaluate. Quite simply, there are few answers to the question "what constitutes value for money in careers education software?"

The present uncertainty among many careers education specialists regarding the potential of the computer for their area means that they have found it difficult to specify how they see it helping them. This uncertainty is reflected in a feeling that the use of computers in careers education may be ephemeral and that they may join opidiscopes and teaching machines in the stock cupboard.

If the uncertainty among careers teachers is to be allayed it is essential to begin a thorough review of existing curriculum provision - a process which is, in any case, likely to be brought about by the implications and effects of the new Youth Training Scheme.

There are a number of ways of beginning such a review but whichever one is chosen it must attempt a realistic appraisal of provision as experienced

by young people. The microcomputer should be considered along with all other resources as a part of any changes which develop from the original review.

In determining appropriate uses for the micro three questions may be considered: what can a micro do more efficiently than a teacher? What can a micro do to extend and enrich a teacher's existing practice? What can a micro enable a teacher to do that cannot be done at present?

Whatever the answers are to these questions, action may be inhibited by difficulties of access to machines. Ideally, a well-equipped careers education department would have its own microcomputer - preferably to the standard of the BBC model B. This would be likely to encourage the development of user-commissioned software which would enable easy exchange of programs between schools and between schools and careers services; a rapid development of good quality software by national organizations, currently producing career materials; and the design and provision of a coherent programme of in-service training for those involved in careers education.

The local and national survey identified examples of exciting and innovative use of the micro by careers education specialists. In almost all instances success depended on a clear understanding of the contribution of careers education to the personal development of young people. These examples may point the way to a future situation in which the micro is used as part of the day to day work of teachers in all aspects of the curriculum.

Certainly, careers education need not and should not be a neglected area as far as the microcomputer is concerned. Much adventurous work has already been done and there is great potential for the future.

*The CCDCOIC is the Counselling and Career Development Unit, based at Leeds University. CCDCOIC is the Careers and Occupational Information Centre.

Details of courses run by the project are available from: CCDCOIC Training Project, 22 Clarendon Place, Leeds University, Leeds LS2 9JT.

Peter Bartle is Adviser for Social Education at Calderdale LEA; David White is Seconded Head of Guidance Careers Education to the CCDCOIC project.

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The collaboration called Investigations on Teaching with Microcomputers as an Aid is published this month its most ambitious effort so far. Microcomputers in the Primary Classroom aims to help primary teachers gradually to discover how the micro may be able to help them in their work.

The ITMA Collaboration is unusual among the many groups writing software. It believes that it is difficult to design material that will be found useful and actually used by teachers, and almost impossible to foresee what its effects will be in the classroom in its educational value. Few of the products of the many educational development projects over the last twenty years are widely used, though they usually give excellent results in the hands of their creators.

In a new and unfamiliar medium, the possibilities are even harder to see - the early users of papyrus would have seen the advantages and disadvantages of a portable permanent written record over marks in the sand or engraved tablets of stone, but would surely have had more trouble envisaging published books, workbooks, wrapping paper, newspapers, diaries and all the other uses of the medium. They could not possibly have foretold the impact of computers on people's lives. Much later it was predicted that printed books would replace teachers. The roles of higher technologies from film to the learning machines were similarly misjudged in advance.

For these reasons, ITMA links the design of programs with detailed studies of their effects in the classroom by teachers with a variety of teaching styles, and includes in-service training materials to bring the results to new users. The resulting materials have been developed with non-computer teachers in mind. The aim is to make teaching and learning more effective, easier and more fun. The package is being published by Longman Micro

Micro in the Primary Classroom is a selection of twenty programs presented in the shape of a five-module in-service package, developed for use by two or more teachers within the school. It aims to help teachers who can set up the school micro, load and run a program, gradually to develop awareness and confidence in using the micro.

The five modules steadily extend the range of curriculum rules and the application of the programs introduced. Each module is based around a sequence of suggested activities, some individual, and some in groups, some within the classroom, and some in the playground. They have proved enjoyable, interesting and helpful to teachers meeting the micro for the first time. Each module can take from a month, up to a term, to work through depending on the materials and on the time available.

The pilot version of the materials was tested in three ways, some teachers working without external help at all, others working with a theory teacher support in the school (usually a weekly visit) and some working with college based in-service support. All these modes of use were based on two or three teachers from the same school working on a set of activities, guided by the course reader that forms part of each module along with a manual of use and notes on the various programs included. The activities are designed to ease the transition from first meeting a program to its confident and regular use in the classroom.

Let us listen in on two teachers using the materials. One, they are browsing through a program called Pirates. Before them is the Course Reader. This has guided them through making their timetable for the session together and they are now following questions, simulating a lesson with Pirates, a program which develops problem solving. The aim is to find the hidden treasure following a variety of clues.

Teacher 1 (Reads from the screen) Another problem? Now, we make our choices here don't we?

Teacher 2 Press "Y" for yes and let's leave the clues the same but go on to a bigger grid "X" and "G"?

Teacher 1 Yes and then "Return"

Teacher 1 How big shall we make the grid?

Teacher 2 Well, a 100 by 100 would challenge my lot. They will cope with the 9 by 9 grid but I like them to see if they can use the same strategies on even bigger grids

Teacher 1 How big can the grid be?

Teacher 2 Let's get the program notes . . . mmm . . . Gosh, you're not going to believe this.

Teacher 1 (Laughs) Why?

Teacher 2 You can go up to 99,999 each way and on to negative axes (Laughs).

Teacher 1 Well, let's do this (points to Course Reader). It says "enter minus 1,000 to plus 1,000 for x and minus 1,000 to plus 1,000 for y" and oh I like this! (reads) "Pupils now begin to perform at a level much above the 8-9 year stage." You bet they do!

Each of the five Modules is self-contained but together they form a natural and coherent progression as the teacher becomes more confident in handling the new medium.

Module one: The classroom, the micro and you, begins to explore the potential of the micro as an aid to teaching and learning. It considers familiar curriculum activities such as counting, learning the alphabet, spelling and using simple coordinates. The six programs - Pirates, Testdrive, Biggles, Burglar, Counters and Worm - gently extend the learning activities bringing in elements of problem solving, games, and of strategic and psycho-motor skills.

Module two: The curriculum and the micro considers the primary curriculum and looks at the teaching units in relation to the children's learning. It compares skill learning, concept learning and practice; and individuals, small groups and class groups.

The teaching units - Janelus, Borset and Borpie - are critically examined to assess their potential for learning and teaching - the aim being to develop the teacher's skill in recognising the potential of powerful and specific software. The program matrix provides a structure to help this.

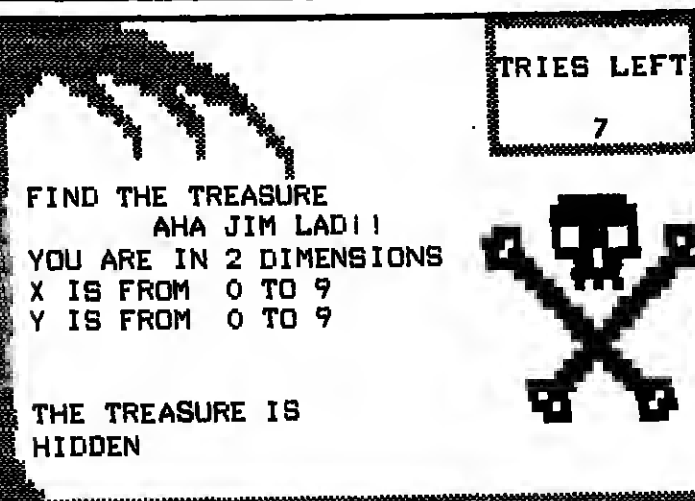
Teachers are asked to imagine how the materials might conceivably be used by a range of teachers (filled in by Xs) as well as in their own situation (marked by Os). Blocking in of a section with vertical lines indicates the teacher's actual progress in using the program with children. One, for example, thought that she might use Burglar (a Module one program in which children must discover the number the computer has thought of, and compare strategies for doing so) for skill learning, concept reinforcement and activity development as an individual activity managed completely by the computer (Os).

She envisaged that the program could also be used for concept learning and be managed by the teacher with an individual or small group (Xs). When she finally tried out the program, however, she used it as she had planned but did not exploit the strategy-developing potential of the program.

By the end of Module two, teachers will be the primary curriculum as a whole. Material within the Course Reader of Module two aims specifically at stimulating this. ITMA aims to focus attention on the curriculum, the children and their learning activities. The overall aim is to produce programs that will help the teacher more effectively to stimulate valuable learning activities, particularly the ones that were hitherto not easy to realise.

Some other points have arisen from classroom studies. First the children perceive the micro as a separate

EXTRA

In practice
Rosemary Fraser and Hugh Burkhardt on a
new in-service package for primary
teachers which includes 20 programs

personality, independent of the teacher, and not just as a piece of apparatus used by the teacher like a blackboard or a book; the design of this personality is important - for example, we find that programs with a "human" image keep the children's attention significantly longer than those that are "neutral" or merely audio-visual.

The principle of "omission design" is most important - here active effective learning will only take place if the essential elements are left off the screen so that the children must construct them for themselves.

The omission design principle is often shown at its best when the computer has been switched off; the sequence of learning activities which

the program has stimulated is often then at its richest. This is well illustrated by Eureka - a fairly well known ITMA program which is included in the MEP Micro Primer Pack. We have included Eureka in Module three. The cartoon of the man taking the bath under your direction and the synchronised graph of the water level against time show clearly the principles involved. However, when the cartoon is switched off and only the graph is shown intense involvement follows with an active discussion of the various possibilities for the interpretation. Skill, ingenuity and imagination are demonstrated. The program allows you to replay the sequence with the cartoon on, but teachers will disagree as to whether it is a good idea to

provide a "right answer" when other more or less valid interpretations have been created and discussed.

Children can write their own stories, draw their own cartoons, sketch their own graphs for others to interpret. As shown in the children's work below they can also play a teacher's role in commenting on those interpretations. The shifting of classroom roles is a most valuable contribution of the micro in supporting the teacher.

Module three: Managing the micro asks questions about the management of the new technology in the classroom and in the school. How may the micro be used in less familiar classroom activities and in preparing materials? This Module also contains teaching units Autosum, Oops, Blok, Eddy and Clues; apart from graphical interpretation, they show how the micro may help in logic and language.

Any serious look at language must allow the teacher, or the children, to input their own text and Eddy is a simple wordprocessor program designed for this. Clues allows the teacher to manipulate and prepare text in a variety of ways. Printed materials can be produced for use by groups in a school. These programs are a flexible resource that seem to have a wide range of possibilities; they introduce the teacher to the micro as an aid to them in preparing materials of their own - a continuing theme from this point on in the course.

Module four: Building in your ideas and Module five: Going on learning will lead teachers who are ready, to explore some specially designed systems. Seek, Think and Slyfox, for which they can create their own materials. Intree and Scene are support programs which enable the rapid creation of original materials without any knowledge of conventional programming by the user (actually, any set of "key presses" with which you control a program is "programming"); ITMA continued on next page

Below left: from Janelus. Above: from Pirates and overleaf a child's work which followed from Eureka.

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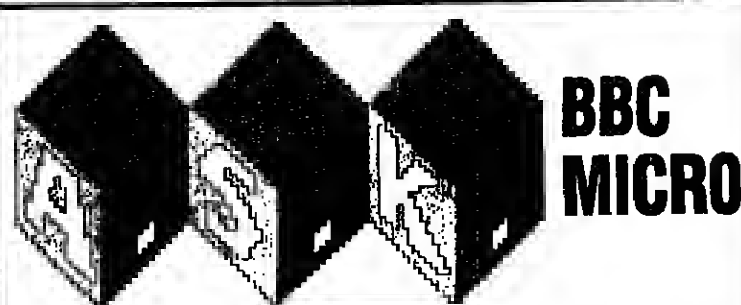
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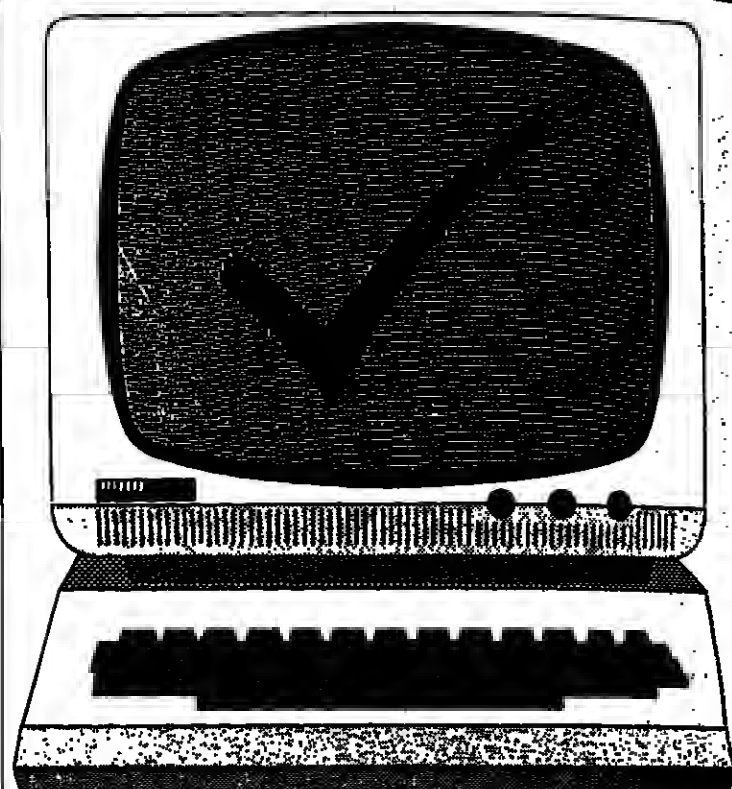
The City and Guilds is the largest technical examining body in the United Kingdom and examines over 500,000 candidates every year. Over 40% of these are mature and experienced men and women seeking qualifications for promotion, transfer, up-dating or re-training. It is not surprising, therefore, that City and Guilds is devoting very considerable resources to investigating applications of information technology to the provision of its examinations and assessments in all their various aspects. This article is concerned primarily with current and possible future developments in the use of computers to prepare assessment materials; to deliver that material to the examination centre and the student; and to expedite the analysis and issue of results. "Written" tests (including both open and fixed response types) will be discussed first, followed by "practical" assessment, profiling and open learning.

WRITTEN TESTS

Written tests are prepared in four stages: question writing, question editing, pre-testing and test-compilation. The test materials have to conform to a test specification, which in turn reflects the syllabus, and they have to avoid a series of pitfalls such as ambiguity and unintended clues. There may be benefits from having the questions written and edited using word processors with extensive "proof-reading" software built in to guide authors. The questions would then be entered on computer without going through a "paper" stage. After pre-testing, the questions are banked and are available for test-compilation.

The Institute is implementing a computer-based system for compiling multiple-choice tests from question banks either manually or automatically. In the manual mode questions are reviewed and selected at a computer terminal. In automatic mode questions are selected by the computer to produce a draft test in accordance with a specification. This draft is checked by hand. The quality of the computer-produced draft will depend on the extent to which the computer is enabled to mimic the human selectors criteria for choosing a set of questions. For instance, it will often be necessary to distinguish the contexts of questions, so that a variety of contexts can be built into the test.

It is in the delivery system for tests that information technology offers scope for radical change. At least one



Testing, testing

Nick Stratton on the use of the computer in preparing assessment materials

examination body already has a disc/postal system for student registration in operation, whilst at CGLI we are investigating downloading by phone. At present tests are printed and distributed by post. However, as the tests will start life in computer memory, it would be more appropriate to maintain in the form of software (discs, cassettes or by phone) or in the form of telecast software direct to microcomputers at examination centres.

Such delivery arrangements would have both advantages and drawbacks. The main advantages are that several proof-reading stages are eliminated and the tests are available on demand. The chief drawback is lack of security - the same test could be set several times. One way around this problem, suitable at least for multiple-choice

tests, would be to construct and supply "super-tests". A super-test would contain say 500 questions, with a multiplicity of routes built in such that a student could release the test without meeting the same set of questions twice. The question formats could include both fixed response and open responses of a few words.

In many cases it would be an advantage to exploit the rehearsal capacity of super-tests by building in diagnostic feedback. Thus the same test fulfils both formative (feedback) and summative (reward) purposes. Such a system could prove both powerful and efficient in educational terms. But care would have to be taken that these tests were compatible with the curriculum, in particular with teaching

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In practice

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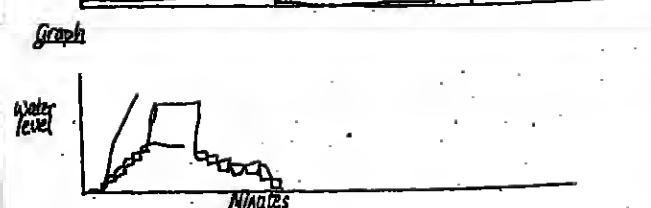
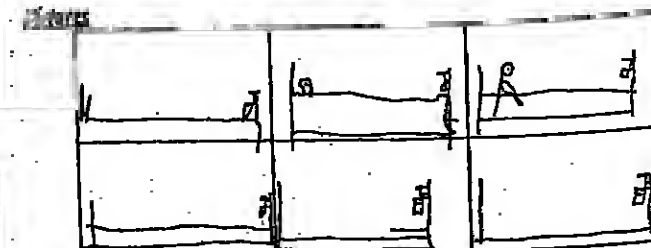
programs each have a very simple "programming language" naturally linked to the features of the program.

Seek and Think are two programs for developing skills in binary classification, including observation and language skills. They may be used for a wide range of tasks from simple identification of slugs or unknown white powders to an exploration of the feelings of Napoleon as he fights the battle of Waterloo. *Slugs* develops the skills of logic, language, visualisation and problem solving as children search for a fox in a farmyard, or an alien invader on their spaceship.

Micros in the Primary Classroom aims at providing a very practical course for examining aspects of using the new technology in schools from the simple to the sophisticated. Being flexibly designed, it can be used by lecturers working from a centre, for a "school based" course or as a distance learning pack for use by teachers themselves. Several of the programs can be used across the whole age and ability range, though the early Infant stage generally requires more active teacher participation. The discussion in the staffroom over coffee of the same material at different levels promotes a healthy sharing of ideas and an enjoyable way of reviewing the primary curriculum both with and without a computer.

Rosemary Fraser and Hugh Burkhardt are members of the TMA collaboration and of the Shell Centre for Mathematical Education at the University of Nottingham; TMA's other main centre is the project at the College of St Mark & St John, Plymouth.

myself put in the plug (then put on the hot tap)
then I put the taps on - then I was to hot so
I let some water out. Then I jumped in
SPLOOOOSH.



Remember story of my graph
you put the plug in turn the
Tap on half way then you got in
and it rose then you got out
and pull the plug out.

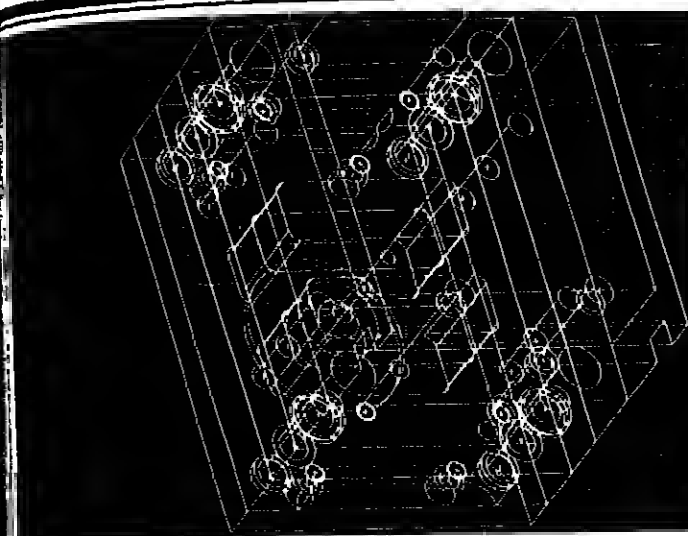
MUSE

Computer programs provided by MUSE referred to in Anita Straker's article in the Mathematics Extra of October 14 cost 50p for the subsidized program plus post cost £1.75 plus VAT. MUSE provide the tape.

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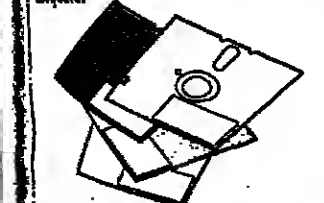


Testing testing

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styles and with any locally produced CAL software. Incidentally, the style of super-tests may be conventional (resulting in a score), adaptive (resulting in a level of competence) or mastery (resulting in a list of satisfied objectives), or all three!

Two problems need to be tackled if super-tests are to be viable. The first is security: is it the candidate or his sister taking the test? Invigilation would be costly. Tests may be taken at any time and individually. Therefore some means of student identification must be explored. The second concern is figures (drawings or text) accompanying questions. These figures may occupy too much screen space, and in the case of drawing the graphics quality of popular micros may be inadequate.



One solution is to use a video camera controlled by the micro, so that figures and questions can appear on a monitor on two screens: the approach has advantages when motion is relevant, e.g. in demonstrations and simulations. However, figures taking the form of lengthy texts or complex drawings could be kept suitably referenced in a manual accompanying the software. Paper still has its uses!

The fourth stage: the test itself. The issue of results - is already handled by computer. So the whole "super-test" cycle is completed by stage three, the uploading of student's results via disc or phone. This stage should be put under the control of the student, who would select to "register" (and have uploaded) his or her test results. These results are then collated and any merit certificate or award (potentially in profile format) sent to the student. The certificates and awards are also archived.

In addition to issuing results to students, the Institute operates a feedback system for teaching staff via a computer. Each centre profile gives the average performance of the group of students at the centre and the mean national performance for each of 15 sections of a syllabus. This centre's multiple-choice papers where there are sufficient candidates to support reliable statistics.

PRACTICAL TESTS
It is clear that microcomputers can be employed in several ways in this area, for example:

1. Data handling (data storage, manipulation and computation). This could include both current and historical data, in either numerical or professional form (the latter can be processed using logic-based programming languages).

2. Measurement. There is a variety of input devices available, permitting measurements of almost any kind to be entered directly. This affords a means of project control (if the computer is programmed to "expect" such data when using engine test gear).

3. Simulation and demonstration. Interactive graphics software can be used to simulate the operation of equipment (for instance, a more powerful "real time" medium is interactive video, one application of which would be the simulation of safety hazards. Project management: This function would include giving initial instructions and advice, record-keeping and monitoring, where appropriate, the level of performance and modifying the instructions and advice accordingly.

Projects are tied to syllabuses in the same way as written tests by reference to the relevant educational objectives. However, it is often harder to evaluate completed projects, as the objectives can interfere with one another. For instance a poorly analysed problem would be hard to follow through well. One way around this would be to adopt the mastery approach whereby the component activities in the project are released (as a set of assignments) before attempting to execute the project in its entirety. This would increase the scope for project management by micro (via appropriate software).

PROFILING
Micros can also play a part in informal assessment procedures such as CGLI's basic abilities profiling system which is operated in pre-vocational schemes in schools, colleges and YTS. At the heart of this system is a progress-tracking grid containing 70 general objectives. Several users of this system have implemented the associated record-keeping on micro. Also one of the Further Education Unit's Regional Curriculum Bases (at Garnett College) has been cataloguing teaching materials using the profile grid as a classifying device.

OPEN LEARNING
Examination boards have long experience in the construction of syllabuses and assessment materials in terms of educational objectives. This experience complements that of CAL practitioners (eg in schools, colleges, training establishments and correspondence colleges). With the advent of cheap hardware and of a "computer-culture" amongst students, the time is ripe to link diagnostic and formative assessment in the shape of friendly software. This applies to all subject areas. A consequence of this approach to assessment is to facilitate individualised learning. This is particularly relevant to open learning systems, which permit individuals (usually adults) to learn independently, whether at home, at work or at an educational

We're having a
slight difference
of opinion!



centre. City and Guilds already has experience in supporting open learning courses by providing the formal assessment components. Clearly the implementation of many of the above innovations depends on several wide-ranging factors, which have not been discussed above for lack of space. One concerns the availability of hardware and the portability of software. Another, just as important, concerns the reactions of teaching staff to developments that promote individualised learning and which involve changes in teaching styles. Consequently, readers' reactions would be most welcome.

Nick Stratton works at the CGLI's Research Unit.



Natural way

Robert Leggat listens to Seymour Papert

children come in next year, they come into a world in which there are already expert children, there are already children who know, who are doing things which they can imitate, and so a process gets set up, perpetuating this culture.

Asked for his reactions to PROLOG, he replied: "Compared with BASIC, I consider Prolog an intellectually respectable language to give to children. Nevertheless I think it is a wrong language. To pick up one reason: from everything I've seen the dynamic behaviour of turtles entices children to generate their own kinds of projects which are not exercises we give to children, whereas all the examples I have seen of Prolog teaching are more in the nature of exercises, where you say to the child 'Here's a problem - solve it' or 'Here's a system to answer questions from this database'. I've not found that children are spontaneously excited about generating questions, to interrogate a database; they are genuinely excited by shapes, speeds and movements. Prolog is a disaster for moving graphics, as you would expect."

The idea that one needed to computerise everything, however, was stupid. "What one needs to look for are those areas which are difficult to grasp. Finding out about when King John was born is not difficult; it might be boring, but it's not difficult. I think that very soon we are going to see wide availability of big databases on laser discs that will be the way to get at that type of information."

On turtles, Papert said that he had concentrated on turtles on the screen because floor turtles were both expensive and difficult. But there was much to be gained from exploring control of this kind, particularly, for example, with autistic children.

Asked about attitudes to Logo in secondary education, Papert said "I think somehow that secondary school teachers are a little too self-conscious about their particular intellectual disciplines; this imposition of a structure stops them from being enthusiastic about what's really important."

The process of developing a computer environment raised practical issues. One computer in a school or a classroom hardly gave scope for a computer culture. "There has to be sufficient computer power and the children have to have sufficient access to the computer for them to go and play with it, they've got to have enough time so that there is no pressure on them to make use of that precious hour or twenty minutes, there have got to be several children with the computers at the same time so that one doing one thing can see what the other is doing and want to imitate it and say 'Hey! How did you do that?' In other words there has to be a set of conditions that is not always fulfilled in the way that computer presence is implemented in the schools."

What was important now was not the quality of computers, but the quantity. "The cost of giving every child a computer," he said, "was already cost-effective, though it may take time to convince people about this". In the meantime, there was no set formula which required a specific number of computers.

There was no one answer to how the provision of computers was arranged with a school. But there was a principle: "Is the way you are setting it up encouraging the children to take charge, to take over, to develop a culture round the computer, in which they will feel it is theirs, and into which successive rounds of children are initiated?"

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